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THE
INSTITUTIONS
OF THE
PRACTICE OF MEDICINE;

DELIVERED
IN
A COURSE OF LECTURES,
BY
JO. BAPTIST BURSERIUS,
DE KANIFELD.

TRANSLATED FROM THE LATIN,
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IN FIVE VOLUMES.

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PART

ERRATA.

- Pag.* 46. *lin.* 23. *after but insert be*
 48. 12. *dele it*
 71. 6. *for affusion read effusion*
 104. 25. *for soap read soup*
 144. 4. *for brain read lungs*
 191. 28. *for ficcatus read saccatus*
 194. 6. *dele of*
 374. 24. *for of read from*
 412. 23. *for rimæ read primæ*
 461. 12. *for pictonum read pictorum*
 498. 24. *for casts read cast*
 ——— 25. *dele they*
 590. 18. *for fat read feet*
 597. 23. *for happened read happen*

PART I.

DISEASES OF THE CHEST.

CHAPTER I.

OF COUGH.

1. **A**N involuntary *, and more or less violent and quickly-repeated expulsion of air from the lungs, striking against the larynx, which is in some measure constricted, attended with a peculiar clangous sound, and generally preceded by a violent inspiration †, is commonly named *cough*. It seems to be occasioned by the sudden and violent contraction of the fibres and muscles, which are chiefly subservient to expiration, excited by irritation occasioned to the nerves, fibres, and muscles belonging to the organs of respiration, immediately affecting the internal sensible membrane of the larynx, trachea, and bronchia, in a particular manner, or extended to these parts; for it either commences in them, or is propagated thither. Nor do the lungs themselves remain free from this irritation, on account of their being endowed not only with nerves and sensibility, but also with irritability, as Varnier ‡ has lately demonstrated. Hence the first distinction.

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tion of cough which arises, is that into *idiopathic*, or *pectoral*, and into *sympathetic*, or that which is occasioned by *consent*.

* Although it may be sometimes voluntarily suppressed, in consequence of which Haller considered it as being a *voluntary action*, this is not always in our power.

† Haller, l. c. ‡ *Mém. de la Soc. Roy. de Méd.* vol. iii. p. 39. *Mém. sur l'Irritab. du Poum.*; where the author has very clearly shewn that the lungs in living animals are every where irritable; for the lobes, both internally and externally, when irritated, contract, become red and hard, retain the air, and admit no more. These effects appear still more manifest in the *aspera arteria* and bronchia, on account of their having more evident muscular fibres. It likewise there appears that the irritation of the lungs is extended to other parts also, but particularly to the abdominal muscles, which are then thrown into more violent and frequent action.

2. The *idiopathic* species is again divided into *primary*, *secondary*, and *symptomatic* *. In like manner there are several varieties of the *sympathetic* species, according to the diversity of the parts from which it derives its origin; namely, the *stomachic*, *hypochondriacal*, *hepatic*, *diaphragmatic*, *intestinal*, *hysterical*, *inguinal*, &c. Nay, it has not unfrequently been observed to proceed likewise from affections of the testicles, kidneys, bladder, head, and other parts. Most authors, with a great shew of truth, have endeavoured to explain this sympathy of the larynx, *aspera arteria*, and lungs, with a good many other parts, by the power of the *par vagum*, *great sympathetic*, or *intercostal* nerves, by which they influence almost the whole body.

* Instances of the *secondary* and *symptomatic* cough very frequently occur in acute diseases, in gastric fevers, in cachexy, scurvy, catarrh, small-pox, measles, scarlatina, the miliary disease, in a metastasis of the matter of fever, itch, tinea, aches, herpes, ulcers, and, lastly, in diseases of the lungs, as peripneumony, asthma, tubercles, vomicae, consumption empyema, pleurisy, hydrothorax, organic injuries of the præcordia, hepatitis, contusions, and wounds of the chest, and luxation, fracture, wounds, &c. of the ribs.

3. Another distinction of cough is into *moist* and *dry*; and this is held to be in common to every species of cough. For when a violent concussion of the chest, and repeated expulsion of the air from the lungs, take place (1.), whatever is contained in their vesicles, in the bronchia, trachea, and larynx, is shaken off, and by the repeated shocks expressed from the vessels and glands, and spit out. If, therefore, any fluid be brought off by cough, of whatever nature it be, we name the cough *moist*: but if no fluid or matter be discharged, we name it *dry*. But it is generally dry at the beginning, gradually becoming moist in the progress of the complaint. It is named *ferina* when it is very violent, and *lenis* when it is more mild. It is also named *continued*, or *intermitting*, or *periodical*, *nocturnal*, *catarrhal*, *rheumatic*, and *epidemic*, according to the period when it arises, or the diversity of the cause by which it is occasioned.

4. Besides these varieties, which are the principal, almost all modern writers likewise make mention of a *convulsive* species, employing a new

term, although the disease which they comprehend under it may be called ancient, agreeing nearly with the *tussis ferina*, as, according to Hoffman, Hippocrates appears to have had it in view when he makes mention of the *tussis ferina, delassans*, or *suffocans*. Nor was it unknown in after times. For it is named by Sydenham *pertussis*, by the French *quinte*, or *coqueluche*, and by the Italians generally *tosse canina*, or *asinina*. The first who named it *convulsive* seems to have been Willis: nor did he name it so improperly; not because it is occasioned merely by the thorax being convulsed, which is common to almost every cough, but because it attacks the patient with such violence, as not only to powerfully constrict the chest and lungs, and hinder their expansion, but to convulse and shake almost the whole frame. For upon being seized with it, which happens at intervals, they are almost suffocated; their face swells and becomes livid; they tremble all over; a discharge of blood from the nose, eyes, or mouth takes place; they vomit whatever they take in; they void their urine and stools unconsciously; sometimes they remain like dead people, and without power, insomuch that they require being shaken, and recalled to life by air being blown into them. Moreover, they feel a sense of titillation in the larynx, which seems to extend to the pit of the stomach, and they send forth a peculiar sound, as if coming from the bottom of their chest. But it is particularly to be observed, that

when coughing they continue only to expire for some minutes, without inspiring; and, if at length they recover the power of inspiring, they send forth a particular hissing, clangous noise, like a kind of howling, in consequence, as I imagine, of the air entering the straitened glottis, and passing it with difficulty. This cough generally proves distressing to infants and children, prevails epidemically, and frequently is the forerunner of measles and small-pox. However, it does not always spare grown-up people.

5. The causes from which coryza and other catarrhal affections proceed *, on the whole, are capable of occasioning *cough* also. Such are, particularly, sudden cold, the north-wind, as well as damp, cold winds; sudden changes of the weather; the incautious cooling of the feet or other parts; the imprudently passing from a warm to a cold situation; an epidemic acrimony floating in the air; and the like. In consequence of which it happens, that the perspirable matter, which ought to have passed out from the lungs, or proceeded from the whole surface of the body, being retained, and carried to the air-passages, or, in consequence of an epidemic miasma being received and absorbed, the mucus destined for lining the larynx and trachea acquires a vitiated acrimony, or the lymph and blood becoming more copious and viscid, flow to them and to the lungs, and accumulate there, and, by their

accumulation and dilatation, excite cough. Cough is likewise excited by morbid states of the bronchial glands; by crude tubercles, scirrhus, vomicæ, and hydatids of the lungs; by acrid bodies passing or drawn into the larynx, or generated there. Such is the origin of the idiopathic and *primary* cough. Concerning the *secondary* species of the complaint, and particularly concerning the scorbutic, venereal, scabious, herpetic, and other symptomatic species of more rare occurrence, it is not proper to treat at greater length in this place.

* See Vol. IV. chap. xi. Of *Gravel*, *Coryza*, &c.

THE DIAGNOSIS.

6. THE cough arising from the causes above mentioned (5.), on account of its completely agreeing with catarrh and fluxion, is commonly named *catarrhal* and *rheumatic*, that it may be distinguished from other kinds of cough. But according as it is occasioned by a thin or thick humour, it usually assumes different symptoms, and requires a different method of cure. It is of consequence, therefore, to carefully point out the symptoms of each cause, that no error may be committed in the diagnosis and treatment. It will appear that the cough proceeds from a thin and acrid humour, by the patient's being of a warm and dry temperament, of a slender habit of body; by the watering and redness of the eyes; by the face being suffused with a red co-

lour ; by the heaviness of the head ; itching of the nostrils ; frequent sneezing ; moist coryza, sometimes excoriating the nostrils and upper lip ; by the constant titillation of the throat, and frequent inclination to cough, which are particularly severe in the evening ; by there being none, or a scanty secretion of thin lymph, or saliva ; by the breathing being somewhat difficult ; by the pulse being generally somewhat quick and hard ; and, lastly, by the preceding diseases denoting acrimony of the fluids. On the other hand, when a thick and viscid humour excites the cough, the patient is distressed with it more in the morning ; a tenacious, whitish, or yellowish matter is coughed up ; the lungs and bronchia are overwhelmed with a frothy mucus ; the respiration is somewhat oppressed and laborious ; and, while inspiration is performed, a noise and hissing, like that of the fluid boiling within, is heard.

7. From these remarks, therefore, the seat and cause of cough may be collected, particularly if it have been preceded by those things which chiefly affect the respiratory organs. It will appear more certainly that the cough is of the *catarrhal* kind, if heaviness of the head, coryza, and some pain of the throat be present at the beginning : but that it is the *idiopathic* species will be found principally, if, in addition to the symptoms already enumerated, when the patient makes a full inspiration, or speaks for a considerable length of

time, the cough come on, or be increased; if the upper part of the chest feel as it were oppressed with humour; if the voice at the same time be hoarse; if the expectoration be felt to proceed from a greater depth; if the thorax and sternum be affected here and there with a prickling sensation; if a slight fever and frequent shiverings come on at night, while all the symptoms experience an aggravation in the evening, as I have elsewhere said of the catarrhal fever.

8. I must observe that the *convulsive* cough, of which I have made mention above (4.), is confounded by most writers with the *tussis stomachalis* (2.), and that it is derived from the stomach being loaded with an acrid and mucous colluvies. Those who acquiesce in this opinion, in order to prove that the stomach is affected in the convulsive cough, affirm that it is generally followed by the vomiting of the ingesta and mucous matter; that the sense of titillation extends to the pit of the stomach; that a more hollow and clangous sound, as if seated at the bottom of the stomach, is produced in it; that oily matters always prove hurtful, while bitters, stomachics, and evacuants, both when taken by the mouth, and injected by the anus, prove serviceable; and, lastly, that a similar cough distresses patients during the paroxysms of some intermittents, the forms of which is commonly supposed to be contained in the *primæ viæ*. But, as far as I can judge, they

ought first to shew, which will be very difficult, that the vomiting is not sympathetic, but idiopathic; and, in like manner, that the sense of titillation of the pit of the stomach is really idiopathic, and not fallacious, and that it to a certainty belongs to the stomach, and does not pass thither from any other part. In the next place, the more hollow sound, if in fact it be so, occasioned by the cough, seems to prove nothing certain; as that sound cannot be with certainty referred to the abdomen, but to the cavities of the chest and lungs. Besides, it is by no means true that oily remedies always prove hurtful, and bitters and evacuants serviceable: for frequently the former greatly relieve this cough, although they sometimes appear to be inefficacious, being overcome by the violence of the disease. Neither do bitters, emetics, or purgatives always prove serviceable, as I have frequently learnt by experience. And if they ever produce any good effect, ought this always to be ascribed to their being friendly to the stomach, and to their drawing off the collu-vies and cause of the complaint? Do they not likewise prove serviceable by their inciding and attenuating property, by giving a shock to the lungs, and by promoting expectoration and diaphoresis? I am therefore disposed to adopt the opinion of Home, who intirely ascribed the difference between the convulsive cough and other idiopathic species of the complaint, to the degree

of irritation which takes place in the parts affected being greater than in common catarrh, and to the greater irritability of the whole body *.

* *Princ. Med.* 1. 2. p. 3. sect. 5. § 10.

THE PROGNOSIS.

9. COUGH is generally considered as being a slight disease ; but improperly, for it frequently passes into other very serious complaints, as peripneumony, pleurisy, hemoptysis, angina, phthisis pulmonalis, tubercles, vomica, rickets, epistaxis, abdominal or inguinal hernia, abortion, uterine hemorrhages, organic injuries in the præcordia, headach, watching, fatal apoplexies, in consequence of the rupture of the vessels of the brain, and similar complaints. It is always injurious to the head and eyes. If a thick and concocted expectoration, or one streaked with blood, occur in the catarrhal cough, it generally puts an end to the disease *. Sometimes a flow of sweat, sometimes a diarrhœa, has cured the most obstinate cough. The convulsive cough not unfrequently proves fatal to children of one year old, and before the appearance of the canine teeth ; in others it is not equally dangerous. Those patients generally escape in whom an epistaxis occurs †. If it continue long, as frequently happens, and cannot be alleviated or allayed, it terminates in scrofula, rickets, and consumption ‡ ||.

* Van. Swiet. in Boerh. § 830. n. 2. † Bisset, *Med. Essays and Observ.* p. 173. ‡ *Id. ib.* p. 178.

|| Principally on this account, Butter, in his treatise on the convulsive cough, is of opinion that this disease has not its seat in the lungs; and adds, that he never saw rickets and scrofula proceed from a pulmonary cough. See *Edin. Med. Essays*, vol. i. But, with submission to him, others have observed this; nor is it difficult to be explained. Strange! did he never observe phthisis pulmonalis originate from convulsive cough? a thing which is of such frequent occurrence.

THE CURE.

10. EVERY cough (1. 2.) ought to be opposed by those remedies which correct or remove its efficient cause. On the whole, if the cough be slight, and interrupted with long intervals, it is frequently discussed merely by the aid of nature, by watery, warm drink, and by a diaphoretic regimen. But if it be very distressing, and of more frequent occurrence, it requires bleeding, although fever be absent, and sometimes even its being repeated, that the commencement of inflammation may be prevented, or the rupture of the vessels, which is threatened, guarded against. This is particularly necessary in patients of a sanguine or plethoric temperament, and in those who are predisposed to hemoptysis and phthisis, in the *dry* cough (3.), and likewise in that which is occasioned by an acrid and warm humour. For nothing more certainly removes and resolves fulness of the vessels, congestions, phlogosis, and spasms, which are conjoined with unusually severe cough, than bleeding: for skilful practitioners observe and lament that, in consequence

of this being neglected at the beginning of coughs and catarrhal affections, these complaints very frequently gradually pass on to phthisis. After it, diluent and diaphoretic remedies afford the greatest assistance; for, in consequence of a gentle sweat being kept up, the cause of the disease is drawn out and averted from the lungs.

II. But the acrid and thin humour, which occasions the cough, is corrected and blunted by *diluent* and *thickening* remedies, as decoctions of barley and oats; by the root of liquorice, marsh-mallows, saleb*, and cynosorchis; or by infusions of tea-leaves, those of wild-poppy flowers, violets, mallows, and verbasicum; likewise by whey, hydrogala, the soup of frogs, snails, and river-crabs, emulsions of the oily and mucilaginous seeds, the cream of rice, fat oils recently expressed without the aid of fire, the whitest spermaceti, and the like, which likewise relax and allay the spasmodic contractions. The following remedies act more powerfully as thickeners and sheathers of acrimonies; namely, pure and white gum-arabic and tragacanth, of which not only mixtures and linctuses are prepared, but likewise tablets and troches, with the addition of liquorice-juice or sugar, of which the most celebrated are those which are named *pastæ albæ*. But when the disease proceeds from a thick and viscid humour, inciding and attenuant remedies are indicated, such as honey, oxymel, the root of elecampane,

frankincense, flowers of benzoin and sulphur, decoctions of raisins, turnips, betony, scabiosa, lung-wort, white horehound, common Virginian milk-wort, American wild vine, and burdock-root. The following remedies are still more powerful ; namely, Venice soap, gum-ammoniac, kermes mineral, the *sulphur auratum antimonii*, diaphoretic antimony without ablution, and the like, which it may be also expected will be attended with the additional advantage of rousing the torpid power of the solids. Some of them, however, as the Venice soap, gum-ammoniac, and horehound, ought to be employed with the utmost caution in an inflammatory disposition of the blood, and in sensible habits, that they may not prove hurtful by their acrimony and warmth.

* The root of saleb is in great request at present, and almost entirely dissolves into a mucilage. Of the indigenous plants the root of cynosorchis is substituted in its place.

12. Revellents also produce an excellent effect ; the chief of which are pediluvium, epispastics, and blisters. By means of them the cough is sometimes wonderfully relieved and gradually removed, the expectoration is brought off more easily, the respiration rendered freer, and health shortly restored, in consequence of the morbid matter being drawn to another quarter. On this account also are to be recommended cathartics and clysters, in consequence of which the belly being relaxed, I have not unfrequently known

obstinate coughs in this manner removed. Nay, I have sometimes seen them yield merely to pretty brisk cathartics. I may here bring in a remark of *Prosper Alpinus*, who mentions that many patients who, in consequence of long-continued catarrhs, had become so languid and wasted, that scarcely any hopes of their recovery remained, were at length immediately restored, by being very fully purged by means of scammony or colocynth*.

* *De Med. Ægyptor*, l. iv. c. 6.

13. But sometimes the cough is so violent, that, in spite of these remedies (10. 11. 12.), it does not permit the patient to remain at rest. We must therefore have recourse occasionally to sedatives, anodynes, and narcotics, in order to allay it, and procure rest and sleep to the patient. The water of violets, water-lilly, lettuce, and wild poppy, or infusions or conserves of these plants, and particularly emulsions of the cold seeds, and the syrup of wild poppy, or the *syrupus de meconio* of Sydenham, possess a gentle and harmless property; but a more powerful effect is produced by opium, by the *laudanum liquidum* of Sydenham, by the *laudanum nepenthes* of Quercetanus, the *pilulæ de styrace* of Sylvius, by those of *cynoglossa*, and other remedies containing opium, described by every author. Some propose for allaying the cough, when very severe, inhaling, by means of a funnel, the vapour of

warm water in which the most emollient plants have been decocted. Nor is this remedy void of efficacy. In the employment of it, however, care must be taken that the steam may not be too warm, nor employed in patients in whom there seems to be a tendency to the spitting of blood, or who labour under too great laxity and debility of the lungs.

14. Moreover, in the *convulsive* cough (4.) experience has shewn that it is attended with the greatest utility at the beginning of the disease to let blood pretty freely ; to excite gentle vomiting, and even to repeat it when nothing contra-indicates it ; to purge the belly with manna, rhubarb, and sweet mercury ; to produce ulceration on the skin by means of cantharides, that the mucous and acrid humour may be dissolved and drawn out ; at the same time to alleviate the cough by means of demulcent, thickening, absorbent, and paretic remedies. Sydenham recommends the curing of this cough merely by bleeding, epispasties, and gentle cathartics *. Huxham used first to blend mercurials with the cathartics, and afterwards administered the peruvian bark †. According to Bisset likewise, a gentle emetic, consisting of oxymel of squills, rhubarb, and manna, is the best remedy ;—after which he employs the peruvian bark, particularly when the disease has taken a turn, and longer intervals between the fits of

coughing take place ‡. Of the emetics are preferred, ipecacuanha, tartar-emetic, and oxymel of squills ||. The practice of these authors, however, is opposed by Burton §, who objects to phlebotomy, vomiting, and purging, excepting in very severe cases; but he recommends the mixture into the composition of which cantharides enter. Nor is this to be wondered at, when we recollect that the physicians of England, and others beyond the Alps, are generally so much addicted to the employment of poisons and violent remedies.

* *Epist.* i. *responsor.* † *De Morb. Epid.* T. i. p. 75. T. ii. p. 26. 28. 178. ‡ *Med. Essays and Observ.* p. 178.. || *Med. Essays*, vol. iv. Huxham, l. c. § *Med. Essays*, vol. vii.

15. The moss of trees, and particularly that of the oak, is said to be surprisngly efficacious in the removal of this cough (14.). Baglivi recommends a decoction of it. A syrup is also prepared from it, to be given to children and infants *. With regard to the decoction of this moss, Metzger † employed it unsuccessfully; but he affirms this merely from having once made trial of it; nor did he repeat the experiment, as he ought to have done. Likewise the cup-moss ‡, or lichen pyxidatus, is proposed as a specific against the *convulsive* cough by Van Woenfel ||. He used to give it, with the greatest advantage, sweetened with the syrup of mint. Dillen, on the authority of Gerard and Willis, recommended employing the powder of it several times. Others pre-

scribe a decoction of it in milk, to be taken frequently in the course of the day. Some of the moderns prefer the extract of hemlock to other remedies. Butter § records twenty cases in confirmation of the great efficacy of this remedy. He employed this extract sufficiently diluted in some watery fluid; and began first with a small dose, afterwards proceeding to a greater. For a child not six months old he prescribed half a grain, to be taken at different times in the course of a day; to one of from six months to two years old he gave a whole grain. To patients from two years of age to twenty, he used to prescribe as many half-grains to be taken in the course of the day as they were years old. In patients upwards of twenty years of age, he exhibited ten grains upon the first day, but afterwards increased the dose as it seemed necessary. If the patient had not two stools in the course of the day, he recommended adding to it magnesia, or sal polychrest; which he used to employ in patients of any age or temperament, or of either sex, without harm. If the disease be combined with worms, dysentery, dentition, small-pox, measles, besides the extract of hemlock, he does not omit the remedies calculated for these complaints. Nor is he afraid of employing it in pregnant women, or in persons labouring under fever. It therefore remains for us to confirm the efficacy of this remedy, by new and accurate trials. Some practi-

tioners also have employed musk with advantage, particularly in hysterical and hypochondriacal patients, and nervous people. For it seems to prove serviceable on account of its possessing an anodyne and diaphoretic property. Gorter ¶, in a particular epidemic *convulsive* cough, experienced the utility of a saline and diaphoretic mixture. And, in fact, nothing is attended with greater advantage than promoting a diaphoresis in a disease which is generally occasioned by the retention of acrid perspirable matter. I myself likewise, in the case of infants and children, have experienced great advantage from the employment of fresh butter beat up, and washed with the purest water, and made into small balls, one or two of which, sprinkled over with sugar, were occasionally swallowed. Likewise purified whey, or milk itself diluted with warm water, have more than once broken the force of the disease, and checked its progress, or rendered it safer.

* The formula of this syrup is to be found in the Pharmacopœia of Wirtemberg. † *Advers. Med.* par. 2. p. 56. ‡ The *cup moss*, or lichen pyxidatus, is the *muscus pyxioides terrestris*, C. B. or lichen pyxidatus major, *Instit.* R. H. Tournefort, or the *lichenoides tubulosum pyxidatum cinereum* of Dillen. || *Hist. de la Soc. Roy. de Med.* vol. ii. p. 294. § *Journ. de Med.* vol. lii. p. 523. ¶ *Dissert. de Tussi*, which is well deserving of perusal.

16. In every cough of long continuance, when the disease is drawing to a close, and great part of the matter has been expectorated, or when the catarrhal humour continues to flow too long, or too copiously, to the lungs, on account of a par-

ticular kind of atony, and the body is wasted in consequence of the spitting, gently-strengthening and vulnerary medicines are to be employed. Under which head come bitters, especially if the debility of the stomach, and relaxation of the lungs and habit seem to foment the cause of the complaint. Among these the peruvian bark holds the principal rank. It is likewise of remarkable service when the cough observes a particular period. Home also, by having recourse to this excellent remedy, used very quickly to remove the periodical cough. It is attended with advantage to add a little asses or cows milk to the decoction, or infusion, of this bark. Many practitioners of the present day propose, for removing a long-continued cough, threatening consumption, a decoction of the *lichen islandicus*, to which a demulcent and inspissating property is ascribed. It is likewise supposed by some to possess a resolving and inciding power. Independently of its mucilaginous nature, it likewise possesses some degree of acrimony, as appears from its emetic or cathartic virtue when a strong decoction is employed. I myself have sometimes removed obstinate and dry coughs by prescribing the copious drinking of the *aqua nucerina*, or *aqua vilensis*, and by tepid bathing in soft water. Other practitioners, particularly the Germans, recommend Selter water, with a third part of asses milk, to be taken in moderate quantity every morning for some weeks.

17. Old people also are frequently troubled with cough. It is proper to oppose * such a cough, as being generally occasioned by a great quantity of mucus collected in the ventricles of the larynx, and in the follicles or cryptæ of the aspera arteria and bronchia, by inciding, bitter, and atténuant remedies (2.), because hoarseness and gravedo occurring in people far advanced in life, according to Hippocrates †, are not concocted. But because they are principally liable to catarrhal and rheumatic affections, they ought to expose themselves to the air gradually, to avoid warm bed-chambers, to diminish their cloathing by degrees, to go into a cold bed, to live in the most temperate apartments, to employ cold meat and drink, to use much exercise, and, if the affection be of long standing, to strengthen their system by the employment of bark and the cold-bath ‡. Those who are troubled with salt defluxions from the head do not well admit of the employment of cathartics, lest the noxious humour be drawn by the cellular texture to the chest and lungs. A diaphoresis is more advantageously excited in these patients by a decoction of saunders-wood and guaiac, and the cephalic herbs ||. It is likewise of service in the spring-season occasionally to employ the affusion of cold water upon their head and neck. For in this manner the defluxions from those parts which are kept up by too great laxity, may be frequently prevented. Likewise the greatest advantage is recei-

ved from the making of issues in the arms or legs by way of preventative.

* Van Swieten on Boerh. § 69. Gorter, *Dissert. de Tussi*, § 50.
 † Aph. 40. sect. 2. ‡ *Gazzet. d'Oltremonti* 1762. n. xxxii. edit.
 Venet. || Bennet, *Theatr. Tabid.* p. 119.

18. In addition to these directions, the regimen proper to be employed ought to be mentioned. The food should be easy of digestion. Animal food, and every thing acrid, ought to be avoided. The patient must abstain from wine, and from eating suppers; in place of which, either milk, or a barley ptisan, or light pottage of barley-flour somewhat toasted, may be substituted. It is likewise necessary to chuse pure air, by means of which alone the most obstinate coughs are said to have been sometimes removed. Among these remedies, riding in a carriage, or on horseback, the use of the bath, the drinking of medicated waters, decoctions of purifying woods and roots, and a milk diet, ought to be chiefly tried; to say nothing of cauteries, the advantage of which, in a moist habit of body, with bad-conditioned fluids, must appear evident.

19. I shall pass over the secondary, symptomatic, and sympathetic coughs. For as all of them originate from other diseases, and morbid affections of other parts, they require the same method of cure which is calculated for the diseases and causes from which they proceed. Their cure, therefore, depends upon that of scurvy, lues venerea, scrofula, amenorrhœa, measles, fe-

vers, peripneumony, pleurisy, asthma, hydrothorax, phthisis, vitiated chyle in the *primæ viæ*, dyspepsy, worms, obstructions in the lower part of the abdomen, hysteria, hypochondriasis, &c.

CHAPTER II.

CONCERNING THE SPITTING OF BLOOD, ESPECIALLY HEMOPTYSIS.

20. BLOOD which is spit out by the mouth may be discharged from various parts, as the gums, tongue, palate, fauces, uvula, nostrils, pharynx, œsophagus, stomach, larynx, aspera arteria, and lungs. It is discharged exactly in the same way as those already mentioned in the Dissertation on Epistaxis (Vol. IV. c. xii.). But from whatever part the hemorrhage takes place, it has obtained the generic name of *hemoptysis*. Riverius, however, induced by the authority of Galen, is of opinion that *hemoptysis* ought to be distinguished from *bloody spitting* *. Hoffman, Ludwig, Platner, and a good many other modern authors, agree in opinion with Riverius, and not without reason. They say that the word *hemoptysis* is properly applied only to a discharge of pure blood issuing in considerable quantity from the lungs, and that, therefore, the word is not to be employed indiscriminately. However, if any one be disposed to apply the term *hemoptysis* likewise to blood discharged from the larynx,

or aspera arteria, he may do so with all my heart ; nor shall I find fault with him, since it may be considered as being a slighter degree of hemoptysis.

* *De Crisib.* l. i. c. i.

21. But hemoptysis (20.) ought by no means to be confounded with the expectoration streaked with blood which pleuritic and peripneumonic patients discharge ; nor, according to Hoffman, with that which succeeds to an external and violent cause, as a wound, contusion, blow, or severe fall. For genuine hemoptysis is an hemorrhage of the respiratory organs proceeding from an external cause, as plethora, or a particular dyscrasy of the blood, or from the organization of the lungs being injured, or from a solution of their continuity. I find, moreover, that Cœlius Aurelianus, Nicolaus Piso, and others, make a distinction between the *sputum sanguinis*, and the *fluor sanguinis*, supposing that the former takes place when the blood is discharged sparingly, or clotted, and mixed with phlegm and other humours ; and that the latter takes place when the blood is brought off pure, of a bright florid colour, and in great quantity. Although this manner of distinguishing these affections be now obsolete, it will not be useless to have noticed what the ancients meant by these terms, that any confusion or obscurity which might occur in reading their works may be removed. For nearly the

same distinction, which is made at present between the *spitting of blood* and *real hemoptysis*, was formerly by some made between the spitting of blood and the *fluor sanguinis*.

THE DIAGNOSIS.

22. SINCE, therefore, blood may be discharged from the mouth in so many ways (20.), we must next inquire by what marks we may ascertain from whence it proceeds. If it come from the gums, tongue, or palate, it is discharged simply by spitting, and, on inspecting the mouth, it easily appears from what part it issues. Moreover, that which proceeds from the gums, as frequently happens in scorbutic people, is more serous, less dark in the colour, or sometimes even blackish. But if it proceed from the palate, some titillation is felt there; and, for the most part, heaviness or pain of the head, or tinnitus aurium, or throbbing of the temples and forehead, or a night's rest have preceded its appearance. This last very frequently appears in the morning after sleep. But that which proceeds from the fauces, uvula, or inside of the nostrils, is brought off merely by hawking, without cough. Sometimes, however, it excites a slight cough, or desire to vomit, according as some of the blood falls either into the larynx or œsophagus. Moreover, the part can be inspected, and some thing bloody is always blown from the nose, if it descend from it to the fauces. But whenever blood is blown from the nose, we must

not immediately conclude, that that which is discharged from the mouth comes from the fauces, and nostrils. For it frequently happens, that the blood is discharged from the larynx with such force, that some part of it passes upwards into the cavities of the nostrils, and may be discharged from them. From which examples it is quite evident, that such a symptom is fallacious; and therefore not always to be depended upon. It likewise happens, as I myself have repeatedly observed, that while blood is discharged from the lungs, the vessels of the nose, in consequence of the violent effort of coughing, are burst at the same time, and thus a discharge of blood takes place from both these parts. We must, therefore, guard against rashly concluding that both discharges of blood proceed from the nose only.

23. When the blood proceeds from the œsophagus or stomach, it is generally thick and black; sometimes, also, but very rarely, it has the appearance of water in which flesh has been washed, and it is only ejected by vomiting. It is to be observed, however, that occasionally, by vomiting, the blood which is chiefly discharged by the fauces during sleep, and has penetrated into the stomach, is thrown off. But when it proceeds from the stomach, a sense of pain, weight, anxiety, and heat, is generally perceived, and the symptoms which indicate an affection of the lungs and other parts, are absent. In consequence of a slight cough and motion, blood is

discharged from the vessels of the larynx and aspera arteria. Besides, a sense of itching and some degree of heat are felt in the trachea itself, and seem, in some measure, to rise upwards, before the blood appears in the mouth. If the blood proceed from a deeper seat, or from the lungs, it is generally expelled by a more violent cough; it is florid and frothy, from the air with which it is mixed, and causes a peculiar sound within. Hence Hippocrates has justly observed, "Blood which is spit out frothy, comes from the lungs *." But if a fit of coughing, vociferation, or any thing similar, by which the lungs are known to be injured, have preceded, or if a pain †, or sense of weight, be felt in the breast, or if the breath be drawn with difficulty, or if it be accompanied with a sense of pricking or rending any where, especially at the shoulder-blades, or if a greater quantity of air cannot be taken in without the cough and spitting of blood being increased, or excited, we can no longer doubt that the blood has been discharged from the lungs. In the last place, it is to be observed, that sometimes, in consequence of a slight and scarcely observable cough, blood is brought up, which, therefore, may appear to proceed from the top of the larynx, although the quantity of it, and the effects which follow, frequently shew that there has been a deception in the case, and that it has really proceeded from the lungs, or at least from the bronchia.

* Aph. 13. sect. 5. *Coac.* n. 433.

† It was formerly supposed, that the lungs were insensible, on account of being destitute of nerves, or, if any went to them, because they were distributed merely upon their external surface, being derived from the *sixth pair*, which is now called the *eighth*. On which account, most of the ancients taught that the spitting of blood took place from the lungs, without pain; which, although it sometimes happens, is by no means an invariable occurrence. For anatomical research has demonstrated, that the lungs are provided with nerves; and that they are likewise endowed with sensibility internally, appears from the observations of physicians (par. 1.) The ancients themselves learnt from experience, that the blood is sometimes effused from the bottom of the chest with a particular sense of pain; which, when they observed it to happen, that they might not bid farewell to their preconceived notion concerning the insensibility of the lungs, they said that it was then discharged from the thorax, or from the pleura, which they considered as being highly sensible, not from the lungs; nor did they know, that this is intirely inconsistent with anatomical and physiological fact. For, in attempting to avoid one error, they did not perceive that they were involving themselves in another of equal magnitude. Nor is the reality of the sensibility of the lungs invalidated by the authority of Vesali, though an anatomist otherwise of the greatest celebrity, who, upon several occasions, but principally in the case of Count de Bura, observed extensive suppurations of the lungs, without their being affected with pain; which is a circumstance of rare occurrence. But it is then probable that a sense of pain is not excited, because the sensibility of the pulmonary nerves, in consequence of the congestion and compression of the lungs, or any other cause, becomes deadened, and as it were obliterated; or because their tension, distraction, and laceration is so slow as to occasion no pain. Moreover, if there be not wanting instances of the absence of pain in pulmonary complaints, we have many more of its presence. Likewise the late experiments of Lorry, made upon living animals, confirm the truth of the fact, that the lungs, and especially their internal parts, as the bronchia, are really endowed with sensibility; a circumstance well worthy of remark. *Exper. sur l'Irritab. &c.*

24. It is likewise of great consequence to know, that the blood which is poured out from the lungs

is not always of a bright florid colour and frothy (23.), but sometimes appears black, dense, and clotted. For it puts on this appearance either after remaining stagnant in the lungs, and their vesicles, or while it has suddenly flowed out of varicose and aneurismatic vessels, in which it had become almost coagulated. It is likewise coughed up black, and altogether spongy, according to Baglivi (*Rar. Affect. Hepat.*), when any part of the lungs has become sphacelated. For which reasons the symptoms enumerated ought to be considered conjointly, that we may be able to define with safety the particular seat from which the blood flows; and much caution is requisite, that we may not be deceived in our judgment. For, when taken severally, and when those of less frequent occurrence are overlooked, they are apt to confound and mislead the judgment.

25. With respect to the proximate cause of hemoptysis, it is either the rupture of the vessels, named in Greek, *rhexis* and *diæresis*; or erosion, called *diabrosis*, or the enlargement of the orifices and small mouths which open inwards, denominated *anastomosis*. The *rhexis* and *diæresis* is considered as being the most frequent of them all; the *diabrosis* is of rare occurrence, happening chiefly in phthisis and ulcers of the lungs. Generally, however, acrimony of the fluids does not occasion diabrosis, but *spasm*, in consequence of which the vessels becoming contracted, disturb the regular distribution of the blood, forcing it vio-

lently into freer passages, whence, being distended by the impetus, they must necessarily become ruptured. Lastly, the anastomosis is of very rare occurrence, but not so much in women as in men, in consequence of the defect of the usual evacuations of blood.

26. A predisposition to hemoptysis is occasioned by a slender habit of body; by a small, long neck; by a narrow chest; by a bad conformation of it, particularly gibbosity, or depression of it; by a delicate and lax habit of the whole body, but especially of the lungs; by the choleric or sanguine temperament; by an hereditary taint; by plethora; by defect of customary evacuations of blood from the nose, uterus, or hemorrhoidal piles; by polypous concretions in the pulmonary vessels, or in the left sinuses of the heart; by the preternatural compression, congestion, or dilatation of these; by obstructions of the abdominal viscera; by constriction of the abdomen; by spasms; by various acrimonies, especially proceeding from scurvy, whether they simply occasion irritation, or resolve the crasis of the blood, or cause an erosion of the vessels. Youth is more prone to hemoptysis, and the period of life from nineteen to thirty-five. Hence Hippocrates has observed: "Young people are liable to spitting of blood, consumptions, acute fevers, epilepsy, and other complaints, but especially those already mentioned." (Aph. 29. sect. 3.)

27. The complaint is excited by violent strain-

ing of the chest or lungs in raising weights, in dancing, singing, coughing, roaring, playing upon the flute, or blowing a trumpet ; at stool, or during parturition ; by too tight binding of the neck, chest, or abdomen ; by warm and dry air, or that which is too much rarified, as it is upon the tops of mountains, or too cold and moist ; by excess in the use of wine, all kinds of fermented liquor, and acrid and heating things ; too violent motion of the body in running, wrestling, in playing, and in venery ; the mounting of stairs and steep places ; rage, joy, and other sudden emotions of mind.

THE PROGNOSIS.

28. The spitting of blood which proceeds from the gums, tongue, nostrils, uvula, and fauces, is generally void of danger ; which is not the case with that which proceeds from the œsophagus and stomach, if it be copious. But of it hereafter *. I shall likewise afterwards speak of the spitting of blood peculiar to pleurisy and peripneumony, and which, after the turn of the disease, is a favourable prognostic †. Nor is a slight spitting of blood considered as being of much consequence, when it proceeds from the top of the larynx, on account of spasmodic contractions of the hypochondres, by which the blood is impelled thither with greater violence, and forced out.

* Chap. iv. P. II. of this volume, par. 46. 50.

† Chap. iv. par. 105. 116. 117.

29. But genuine hemoptysis is never free of danger. Hippocrates took notice of this when he observed: "A discharge of blood from the mouth, of whatever kind it may be, is bad." (Aph. 15. sect. 7.) Likewise that which is black, clotted, and spongy (24.), is unfavourable, as importing aneurisms, varices, or sphacelus. In particular, great danger is occasioned by a copious discharge of blood from the lungs, because it may either immediately prove fatal, or, by the excessive quantity of it collected within the vesicles or bronchia themselves, it may occasion suffocation, or deprive the heart of the usual influx of blood, or oppress the lungs by its bulk or weight, and thus give rise to a sudden and fatal syncope, or asphyxia. But if these accidents by good fortune be escaped, there is at least reason to apprehend very severe and incurable ulcers in the lungs, and still more so the more impure the body is, or if it at the same time labour under a bad state of the fluids, or any disease which is the consequence of such a state. Hippocrates has therefore with justice observed: "The spitting up of pus mixed with blood is a bad sign." (Aph. 15. sect. 7.) But this is principally true if a slight fever at the same time come on, which never wholly leaves the patient, called a *slow amphemerina*. For in that case phthisis is said to be approaching.

30. That which descends to children and grandchildren, as it were hereditarily, is much more

dangerous and difficult of cure. That species also is attended with more danger which originates from the rupture of a large vessel, or from a deep seat, than one occasioned by the rupture of a smaller vessel, or proceeding from a more superficial seat. The former discharges a greater quantity of blood, the latter a smaller; so that the more copious spitting of blood denotes more danger, and the more sparing less. Upon the whole, that species is reckoned to be more severe and dangerous which is occasioned by *diabrosis*. At the beginning of it, indeed, the blood is discharged sparingly, and is of a salt taste, but is gradually poured out in greater quantity, in consequence of the mouth of the vessel being enlarged by the erosion which takes place. An inveterate and chronic hemoptysis, or that which supervenes upon phthisis pulmonalis, defies the power of medicine.

31. Nevertheless, experience has frequently shewn, that not a few, to whom timely assistance is given, and who rigorously abide by the regulations with respect to diet prescribed to them, escape from genuine hemoptysis, even when it is copious, and returns. But Platner advises allowing it to go on for the first three days. Likewise less trouble is occasioned by the hemoptysis proceeding from air which is too much rarified, or from the suppression of the catamenia, or from defect of any other evacuation, as it generally takes place either by *anastomosis*, or *exsudation*. Less

apprehension also is excited by the species which proceeds from vociferation, or violent motion, than by that which is caused by *diabrosis*. In general, when patients labouring under hemoptysis are slightly affected, without fever, cough, and pain, and when thin blood is spit out for fourteen days, it affords a favourable mark. But it is a bad symptom, as we are told in the *Coacæ Prænotiones* (N. 427.), when the patients labour under a smart fever, and cough, or pain, and always spit up fresh blood.

THE CURE.

32. HEMOPTYSIS requires nearly the same method of treatment as that which I have recommended when treating of epistaxis (Vol. IV. c. xii.); and if there be any difference between them, it arises from the part affected, from the cause, or from an impending disease. When, therefore, blood is forcibly discharged from the lungs, it must immediately be drawn in considerable quantity from a vein, the extent to which it should be taken being regulated by the patient's strength, pulse, age, temperament, and habit; and it may be advantageously repeated, particularly when the hemoptysis returns, if the patient be of a full habit of body, warm, and feverish. It is a matter of no great moment from what part it be drawn, provided it be done quickly. Many, however, consider it as more adviseable first to open the inferior,

and afterwards the superior and neighbouring veins. Nor ought a person to be deterred from opening a vein by the quantity of blood discharged, provided the pulse do not fall, nor the vessels appear empty. We must certainly have recourse to this powerful remedy with caution, but not timorously, unless manifest colliquation, thinness, dissolution, or corruption of the blood, contra-indicate it. For the appulse of the blood to the lungs, and the congestion there, are diminished, and the vessels being less distended, are enabled to contract themselves, and become united. The prophylaxis also, with respect to persons who have an hereditary tendency to consumption *, consists almost intirely in this. Nor ought the other kinds of revulsion, of which I have repeatedly spoken, as cupping-glasses, ligatures, and clysters, to be omitted, in order to obtain the desired end.

* Vid. *Dissert. de Ratione Venesectionis in Hæmoptoicis in Adversar. Med. Pract.* Ludwig. P. I. p. 145. Likewise Ernesti Valentini Co-hausenii *Dissertatio de Noxa Timiditatis in Hæmoptysæos Curatione*; which may be found in *Act. N.C.* vol. i. p. 33.

33. In the mean time the patient ought to recline in bed, with his head and chest raised high, as if he were sitting, and ought to refrain from all kind of motion of body, particularly any exertion of the chest, as well as emotions of mind; and he ought to avoid even speaking, or at least to speak whatever he wishes to say in a low voice, and as briefly as possible. He ought to sleep in

a chamber rather inclining to cold, to be slightly covered in bed, not to derange the circulation of the blood by too tight cloaths, and he ought, with all possible care, to avoid coughing, as well as warm drink or food.

34. Internally those remedies should be administered which are opposed to the well-known causes of the complaint. Excessive heat of the blood, as well as too great tenuity of it, may be allayed by means of cold water, emulsions of the farinaceous seeds, nitre, absorbent earths, saturated with some vegetable acid, and, lastly, by means of the mineral acids. Of these various formulæ are prepared, according as the circumstances and taste of the patient appear to require. I may observe, however, that acids for the most part not only aggravate the cough, but even excite it; than which nothing is more pernicious. When this happens, as I have frequently observed, they must immediately be laid aside. This inconvenience, however, may in some measure be avoided, by diluting the acids which we wish to employ, and mitigating them by means of mucilaginous and oily remedies, by blunting their acrimony by means of absorbents, and by the addition of some opium. It is therefore with reason, as I think, that the mixture named *Sylviana*, from its inventor, is held in estimation. Its composition is as follows:—*Rec. Aq. plantag. unc. vj.; acet. distil. unc. semis; corallior. rubr. et ter. sigillat. singul.*

drach. dimid. ; opii gran. ij. ; syrup. de mecon. unc. j. de qua subinde cochlear. dari consuevit. By means of this mixture the heat of the blood is allayed, and if any clotted blood happen to stick in the pulmonary vesicles, it is supposed to be dissolved by it, while the cough and spasms are allayed and prevented.

35. The spitting of blood, which is not unfrequently occasioned in hypochondriacal and hysterical people (38.) by spasms in the lower part of the belly and thorax, is suppressed principally by opium, by oily and emollient injections, by warm pediluvium, and other antispasmodics. Among the preparations of opium, the principal in this complaint are said to be the *laudanum cydoniatum*, the vegetable æthiops, the *diascordium* of Fracastor, and Dekers's pills, which seem to be likewise possessed of some astringent property. Acrimony of the fluids, if the complaint be occasioned by it, ought to be opposed by means of mucilaginous, farinaceous, fatty, oily remedies, by gum-arabic, and gum-tragacanth, of which the two last mentioned likewise possess an agglutinant virtue. Clerc (*Hist. de l'Homme Malad.* vol. ii. p. 36.) makes mention of an hæmoptysis having been cured, which had continued to return every now and then for three years, accompanied with a dreadful cough, by means of a remedy which consisted of two pounds of barley-water, and an ounce of gum-arabic dissolved in it, employed for some length of time. The Professor of Medicine at Bologna, whose pupil I was for several years,

used to mention in his lectures, that he had recovered from an hemoptysis, arising from acrimony of the blood, with which he had been attacked when a young man, merely by the copious and long-continued employment of the the powder of gum-arabic, and arrived at such advanced old age as falls to the lot of few individuals.

36. In no complaint more frequently than in hemoptysis does the degree of danger, and apprehension both of the patient and by-standers, oblige the physician, however reluctantly, to have speedy recourse to *astringents*. But these, if they be really such, either by no means appear to reach to the vessels which are ruptured, or in any other way opened, or, if they do, do not seem to be at all safe; because, by means of them, congestions, tubercles, vomicae, and, lastly, phthisis, may be occasioned. For the very delicate and irritable texture of the parts cannot bear their violence without the vessels becoming corrugated, spasmodically contracted, and obstructing the free circulation of the blood. On which account Cohausen, after several other celebrated physicians, very prudently warns us not to have recourse to them too hastily.

37. However, some particular remedies, when it seems a proper time for stopping the hemorrhage, on this account are universally celebrated. Among these the principal rank is held by the juice of the *urtica*, especially of that named *mor-*

tua, that of plantain, comfrey, and ground-ivy. Some are doubtful whether these juices prove astringent, or resolving and cooling, or act in any other similar way. In like manner the *fungus Melitenfis* is very remarkable for its astringent property, as is affirmed by some authors, not apt to be over credulous, who have tried its effects upon the blood; nor have they dared to deny to it the property which is every where ascribed to it, namely, that whilst it closes the mouths of the veins, it leaves the blood intirely untouched (*Comm. Acad. Bon.* vol. i. p. 158.). Which, if I mistake not, is a proof that its power of stopping the flow of the blood is not confirmed by sufficiently extensive observations. In hemoptysis Alexander Trallianus used to give every day four scruples of blood-stone, not only to check the spitting of blood, already present, but likewise to prevent it. Gesner, Eraustus, Crato, Riverius, and others highly extolled the electuary for the spitting of blood invented by Haelidæus of Padua*, which, however, is not so remarkable for its astringent as for its anodyne property, and for allaying cough. But if there be any thing in its composition which to some people appears objectionable, it is clearly the suspicious efficacy of the seeds of hyoscyomus, which derange the brain, and may induce stupor, nay, madness. For some years back it has begun to be employed for the removal of all hemorrhages; and a particular water for the healing of wounds, which is

fold by Juliano Landi, an apothecary at Rome, is greatly celebrated. At Milan this specific is so highly esteemed, that it is used with the greatest confidence, both internally and externally, in every species of hemorrhage, but more particularly in every hemoptysis. Our physicians universally declare that this remedy is productive of wonderful effects, insomuch that they never omit its employment in the cure of hemorrhages. Experience, I own, has more weight than any reasoning, however specious. But how difficult a thing is it to institute an experiment properly! How much good sense, caution, and skill is requisite in the conducting of experiments! How much acuteness of judgment and impartiality is necessary in distinguishing the effects of causes from others produced by other intervening causes, that we may not be led into error, and ourselves deceived by our own experiments! But to omit no particular, the composition of the *aqua vulneraria Romana*† is clearly such, that if a person know the physical and chemical properties of the different ingredients, and consider what will be the result of their chemical union, he ought to disregard its praises, and to intirely distrust its astringent properties. Nay, if a chemical process so frequently repeated produced any effect, and imparted to the distilled water the properties of the plants and salts, this water, so far from being serviceable, would rather prove pernicious in the treatment of hemoptysis.

* *The Eleæuarium ad sputum sanguinis* Hælidæi Paduani.---Rec. Semin. hyoscyom. papav. albi, ana drach. x. Terræ sigillat. corall. rubr. an. drach. v. Sachar. rosat. antiq. q. 5. M. f. c. s. q. Syrup. rosar. simpl. electuar. de quo detur drach. una bis in die.

† *The Aqua vulneraria Landini, or aqua Romana.*---Rec. Succ. rec. origani, fanniculæ, betonicæ, verbenæ, sedi sive sempervivi, pimpinellæ, millefolii, an. unc. vj. Succ. mari unc. iij. Sal. alkali, gemm. an. unc. vj. Crem. tart. pulv. unc. iv. Aceti stillat. lib. j. in quo solv. aloes unc. j. cum dimidia.---In succo betonicæ solv. sal gemmæ.---In succo verbenæ et millefolii sal alkali. In succo pimpinellæ crem. tart.---Omnia ponantur in retorta, et digerantur per dies tres, dein distilla s. a.---Caput mort. pulveris. in mortar. et superaffundatur distillat. denuo ponatur in digestionem per dies tres, et distill. ut supra. Replicetur pro tertia vice digestio, et distill. et liquor a tertia distill. obtentus fervetur in vasis bene obfignatis. Ufus; in sputo sanguinis datur cochlear. unum singulis ternis horis; interdum sufficit cochlear. unum mane et vesperi. Sed in vulneribus adhibetur frequentius, splenis aqua ista imbutis, aut injectione ter quater in die, abluta prius parte fauciata quavis vice per vinum calidum.

38. The following remedies are considered as being safer, and approved by the experience and consent of physicians, namely, sugar of roses, conserve of red roses, syrup of greater comfrey, that of dried roses, quinces, and marmalade prepared from them. Likewise the peruvian bark has been recommended, first by Morton, and afterwards by a great many others, as a most excellent remedy, and not without reason. From it the *astringent peruvian electuary* of Fuller *, which is in such common use, borrows almost its intire virtue; although, like other tonics and astringents, it ought not to be employed until the vessels have been sufficiently emptied, and the violence of the fever, if any be present, has been broken. The tincture of catechu also, as well

as that of blood-stone and red coral, is recommended by not a few. Dickson † pronounces nitre, given in small and frequently repeated doses, to be a certain remedy for checking hemoptysis, and sometimes other hemorrhages; and although he administers it in conjunction with conserve of red roses and spermaceti, he thinks that the salutary effects are to be intirely ascribed to the nitre. He considers it as being anodyne, refrigerant, and assuaging. But, with submission to this author, I have frequently observed a cough to be excited by the nitre, than which nothing is more prejudicial in hemoptysis. Nay, sometimes after the long-continued employment of it, in consequence of its acrimony, which is not overcome by the vital powers, it has been observed to induce hemoptysis itself.

* The *Electuary of Fuller*.---Rec. Cortic. peruvian. pulv. unc. j. Balf. toltutan. terræ Japonicæ pulv. an. drach. j. Syr. de symph. Boyl. q. s. M. f. Elect. quod in decem part. æquales dividendum est, ut binæ vel tres intra diem sumantur, et superbibatur haustus aquæ idoneæ. † Vid Ludwig. *Comment.* vol. xviii. P. III. p. 399.

39. But if the general evacuations, and other remedies employed, do not check the flow of blood, or if the quantity of blood which is discharged be so great, that it requires being stopped as quickly as possible, nothing else remains for the patient than having immediate recourse to the drinking of cold water. The greatest expectations of relief are placed in this remedy, provided symptoms of inflammation be not present, nor the hemoptysis combined

with any congestion of long standing, or any morbid state of the lungs, in which cases it is neither so safe a remedy, nor is its benefit so much to be depended upon. In the year 1756 Gervasi* published an express dissertation upon its wonderful efficacy in hemoptysis and every other hemorrhage. But, before his time, others also, and particularly Ghis †, ascertained its virtues by experiment. We must commence with simple water at its usual temperature, and afterwards have recourse to the coldest, or even that which is mixed with ice. Some prescribe a cupful of it to be drunk off every quarter of an hour. My practice is to give eight or ten ounces every half-hour, allowing no other kind of food; and I advise continuing its employment, night and day, for some days, sometimes for a week, or at least until the spitting of blood has ceased. Afterwards the drinking of it should be gradually diminished, and some weak aliment ought to be allowed; on which account Lausane‡, Cirilli||, and Vallisner§, whose names I have elsewhere had occasion to mention, when speaking of the watery diet in the cure of fevers, may be consulted. A later writer, De Mertens ¶, in the treatment of this very severe complaint, has been successful in the employment of cold water, both taken internally, and applied externally by means of linen rags, to the arms and calves of the legs. The same author, however, adds, that when it fails he used to apply a large blister between the shoulders; and illustrates the efficacy of this remedy, both in

immediately allaying the cough, and in checking the spitting of blood, by four examples which he adduces. I myself have several times made trial of this remedy in obstinate and recurrent hemoptysis, but not with the same success with which it was attended in the hands of De Mertens.

* Ignat. Gervasi *a Monte Falisco Medici Romani de Usu Frigidæ in hamoptysi, et quocunque Sanguinis profluvio mechanico-physica dissertatio.* Rom. 1756. See also Orteschi, *Giorn. de Med.* vol. i. n. 34. an. 1763. p. 270. and Swieten, § 1200. † *Lettr. Med.* let. 1. no. 11. ‡ *Vero metodo di servirsi dell' acqua fredda, &c.* || *De Frigide in Febr. Usu.* in not. upon Ettmüller. § *Dell' Uso ed Abuso, dell bevande, e bagni freddi, &c.* ¶ *Observ. Med.* P. iii. c. 2. Vindob. 1778.

40. When the spitting of blood has altogether ceased, the remainder of the cure consists almost entirely in abstinence, rest, and in the employment of a proper diet. Among the remedies employed, milk is said to be highly beneficial, especially asses milk, or skimmed milk; or, if this be not borne, or become acid, the *serum lactis dulce* of Hoffman, which never becomes acid, and used to be very frequently prescribed by its inventor, or the soup of frogs, river-crabs, gruel of oats, or the *potus avenaceus*; likewise the expressed juice of barley, rice, and the like; also watery infusions, not very warm, of betony, cheveril, scabiosa, of the flowers of the smaller daisy, and of arnica, are well adapted to resolve the grumous blood which remains, and to gently strengthen the texture of the lungs, especially with the addition of red roses. I have read of more than twenty

patients labouring under hemoptysis having been cured by Clerc * by means of milk taken from a cow which had been fed upon bran and water and nettles.

* *Hist. de l'Homme. Malad.* vol. ii. p. 31.

41. But above all change of air is to be enjoined. Likewise gestation and riding are considered as being highly beneficial, but ought to be regulated by a skilful practitioner; for they do not answer every person and case. *Balsamics*, also, especially those of a more acrid nature, are seldom admissible, whatever others have supposed, or may still think. With regard to the diet, potage made of the flour of barley, rice, oats, sago, Turkish or Saracen corn; the intubaceous and soft vegetables; calf-feet jelly, and hartshorn, acidulated with citron-juice, or that of peaches, soft boiled fresh eggs; summer-fruits, both fresh and preserved, and the like, are proper to be employed. The patients ought not to use animal food, excepting the flesh of chickens, and young animals, or that of tender fresh-water fish; likewise wine, and every thing acrid and heating ought to be avoided. Care ought to be taken to keep the bowels open; and blood should be drawn generally every three months, according as the patient's age, temperament, the climate, and other circumstances may require.

C H A P T E R I I I.

OF PHTHISIS PULMONALIS, BEGINNING WITH AN ACCOUNT OF UNIVERSAL CONSUMPTION, AND ITS VARIETIES.

42. THE term *phthisis*, which is equivalent to the Latin *tabes*, generally comprehends any lingering decay of the body, without respect to its cause or origin: I say *lingering*, which, it is to be seen, is to be readily distinguished from an accidental wasting of the body quickly terminating, occasioned by any acute disease, or immoderate evacuation, or unusual abstinence from food. I have therefore considered it as worth while to treat briefly, first, of this phthisis, or consumption; and, next, of that, in particular, which succeeds to a morbid state of the lungs, however induced. For although every wasting of the body does not belong to this feat of the chest, so as to be referable to the diseases of this class, still as in both kinds of consumption the first symptom which is noticed as common to both is the emaciation; I therefore do not consider it as foreign to treat of both diseases in this place.

43. Every consumption, therefore, taken universally, may be considered in a double light, either as an extenuation of the body, proceeding from the whole habit, or from a morbid state, congestion, abscess, or ulcer of some of the viscera. That which proceeds from the whole habit, and not from a morbid state of any particu-

lar viscus, receives the appellation of *atrophia* in Greek, which is generally unaccompanied with fever, hectic heat, or cough, and may arise in a threefold way ; namely, either from defect of aliment, or from its being of a bad kind, or from a mal-conformation of the parts to be nourished*.

* Besides this atrophia of the whole body, there is likewise another which affects only a particular part. This last, if it be so great that a limb becomes dry, is likewise called *aridura*.

44. The nourishment will be deficient if it be not received at all into the stomach, or not in the quantity which is requisite, as when the deglutition is injured, in hunger, and want ; or if matter which is not calculated for the nourishment of the body be taken, or it cannot penetrate into the blood, on account of the passages being shut up ; as is known to take place in obstruction or injured action of the pylorus, intestines, mesentery,—which is most liable to affect children and infants,—cellular membrane, or lymphatic vessels, or, though it do reach to the blood, if it do not go to the nourishment of the body, but wasted in consequence of some immoderate effusion of the blood itself, or some other fluid.

45. In consequence of the excessive effusion of blood and other fluids, the body is wasted in hemorrhages, in salivation, in suckling, in the too frequent emission of semen, both spontaneous and artificial, in gonorrhœa, in fluor albus, in an excessive discharge by the bowels

and kidneys, in excessive sweating, in ulcers being long kept open, in dropsy, especially ascites, and in effusions or evacuations of whatever other kind of the excrementitious and useless fluids; as it cannot but happen that some useful fluid, with which the body ought to be nourished, must be carried off along with them. To this head ought to be referred, the *tabes dorsalis* of the second book (N. 49.) of the writings of Hippocrates *concerning diseases*; for the subjects of it are newly-married people, who are affected with it in consequence of excessive venery, and loss of semen; and because the medulla spinalis seems to be injured by it, the name of *dorsalis* (a *dorso*) has been bestowed upon it. The words in which he describes the disease are as follow: "*Tabes dorsalis* originates from the medulla. It chiefly attacks newly-married and libidinous people. They do not, however, labour under fever, their appetite is good, but they still continue to fall off. And the person thus affected, when interrogated, will say that he feels a sensation as if ants were creeping down from his head to his spine; and when he voids his urine, or goes to stool, a copious flow of thin semen comes off, and the seminal fluid does not remain in the uterus, while the patient during sleep has emissions, whether he lies with his wife or not. And when he walks or runs, particularly when ascending an acclivity, he is seized with panting, weakness, heaviness of the head, and *tinnitus aurium*. Such patients, in process of

time, when they are attacked with acute fevers, generally sink under *lipyriæ*."

46. As I am treating of *tabes dorsalis*, I shall not omit to enumerate other species of the same complaint, of which mention is made in the prognostics of Hippocrates, or by other medical writers of extensive experience. And, in the first place, I find, that in the book concerning *internal affections* (N. 13. near the end) mention is made of another *tabes dorsalis*, which, as it also is sometimes derived from immoderate venery, it seems proper to describe it in the very words employed by the author. "The spinal marrow becomes dry principally when the veins going to it have become obstructed, as well as the communication between it and the brain cut off. On account of the general indisposition of the body, it becomes morbidly affected. It likewise becomes dry in consequence of venery. The patient is distressed with the following symptoms: An acute pain is felt in the head, neck, loins, and in the lumbar and crural muscles, so that he is sometimes incapable of bending the legs. Costiveness also occurs, together with a difficulty of making water. At the beginning of the disease he is not so much distressed; but the longer it is protracted, the more violent do all the symptoms become: and the patients grow as it were anasarcaous, and ulcers break out in the loins, of which some heal up, while others break out afresh." This species of *tabes* seems to differ little

from the former (45.). But, in the former, it is probable that the whole nervous system becomes languid; while, in the latter (46.), it is also irritated, convulsed, and lastly resolved. In the former, defect of the useful and nutritious fluids, in the latter, vitiation and stagnation of them, and consequent atony of the solids, constitute the distinction between them.

47. Another species of *tabes dorsalis*, which belongs to this place, is mentioned by Willis (*Pharm. Rat.* P. ii. c. v.). In it a discharge, not of blood, but of ichor, or putrid matter, takes place from the genitals; which, when it is extensive and of long continuance, frequently weakens the powers of the whole system, and, by withdrawing the alimentary matter, induces *atrophia*, or *wasting*. This is observed to take place chiefly in gonorrhœa and fluor albus, whether these effects be produced in consequence of an impure connection, or excessive venery, or a blow, or a bruise, or violent effort, or any other injury sustained by the loins.

48. But let us return to the subject from which we have been led by the consideration of *tabes dorsalis*. I have already shewn (44. 45.) in how many ways the nourishment may be defective. Let us now see in what manner it may be vitiated. This may happen either in consequence of its being imperfectly digested, or from its not acquiring the nature of chyle in the intestines, and

not being properly assimilated to the sound fluids ; or because, being carried into the blood, it meets with crude, viscid, acid, salt, acrid, alkalescent fluids, or such as otherwise deviate from their natural crasis and goodness, and is contaminated by them ; as not unfrequently happens in many diseases, especially after badly treated and imperfectly resolved fevers, which sometimes terminate in hectic fevers.

49. It remains for me to take a view of the morbid condition of parts (43.), in consequence of which it sometimes happens that the aliment is neither sufficiently prepared for nourishment, nor properly converted into an animal nature, nor rightly applied to the nourishment of the parts, or, if it be applied, not retained as it ought to be. Parts are said to be morbidly affected, when, losing their tone, they become languid, and, as it were, enervated. Which, as it for the most part in a great measure chiefly depends upon defect of the nervous fluid, and laxity and inactivity of the nerves, insomuch that the parts become almost resolved ; this species of phthisis is therefore named by Morton *atrophia nervosa*, by which name it is distinguished from that which arises from the whole habit (45.), which he thought it better to denominate simply *atrophia ab inanitione*. But the parts may be not only enervated, as I have already observed, but also affected in the opposite way. For sometimes all the fibres, particularly the vessels, and all the cellular

membrane, become so much contracted, rigid, and consolidated, that they can neither be penetrated, nor moistened, nor extended, nor nourished by the alimentary juice. In which case the body will become sapless and wasted. This is chiefly liable to happen in men of a dry temperament and warm constitution. But when old men become emaciated from this cause, which very frequently happens, it would properly be named *tabes senilis*; although that name is generally applied to the wasting in old age which succeeds to a catarrhal cough of long standing, and copious expectoration; while others are of opinion that this would be better named *phthisis pulmonaris pituitosa*.

50. To the *atrophia nervosa* (49.) is generally referred the *tabes tertia*, which is explained in the third book of Hippocrates, *De Internis Affectionibus*, (N. 13. near the end), ascribed by Haller to his followers. But many more, with Willis, affirm that it is a species of *tabes dorsalis*; with what justice, however, I have not been able to determine. For in the whole perusal of its description nothing occurs which indicates that the spinal marrow, back, or column of the vertebræ, are affected. But because, forsooth, that ancient writer, whoever he be,—certainly not always very successful in assigning the causes or seats of diseases,—is of opinion that in that consumption the spinal marrow is oppressed with blood, are we at once blindly to

follow his opinion? But it may be said, Marinell in his Commentaries remarks that this opinion is confirmed and more clearly explained by Hippocrates, in his book *De Locis in Homine* (N. 18.), in the following words: "When an influx to the medulla takes place, a secret consumption arises." From which passage nothing else is collected, than that Hippocrates believed that tabes sometimes takes place from an influx to the *medulla spinalis*, which in other parts he has observed more unequivocally, but that he did not intend to confirm what has been written in the book *De Internis Affectionibus*, already quoted; as it is perfectly well known, that Hippocrates is neither the author of that book, nor is any mention made there of a species of consumption which may be named *occulta* and *inconspicua*. For in that passage the words are those of an anonymous author, concerning a particular consumption, in which the patient immediately becomes black and swelled, and the parts under the eyes are of a pale colour, while the vessels all over the body are partly pale and distended, partly red and manifest. The patient spits up whitish matter, and with such difficulty that he sometimes feels as if he were suffocated; nay, during the effort of coughing he throws up a quantity of bile, sometimes phlegm, and frequently the food which he has taken in; nor is he relieved unless after another vomiting, and only for a very short time, as he quickly relapses into his former distressing

situation. His voice is likewise more shrill than in health, he is affected with "fever, rigors, and sweats, and continues thus to languish for nine years, few recovering from this complaint." But whatever be the nature of this affection, can it be named *occulta* and *inconspicua*? Are not the lungs also manifestly affected in it?

51. Nor, in my opinion, does Marinel make for his point, when he endeavours, from the same book (*De Locis in Homine*, N. 29.), to shew that Hippocrates in fact there meant the *tabes dorsalis*, because he has written, "that the patient's loins, and the anterior parts of the body, became pained, and felt as if they were empty." For these symptoms may be reckoned to be general marks of consumption; nor do they sufficiently point out *tabes dorsalis*, far less that species of the complaint mentioned by the author of the book *De Internis Affectionibus* (50.): unless we chuse to name every species of *tabes* arising from the system in general *dorsalis*; which I should consider as being altogether absurd. Nor can I assent to the opinion of Raulin *, who considers the *tabes nervosæ* as being altogether the same with the *tabes dorsales*; probably because, from the passages of the ancient writers, which are found to be exceedingly obscure and complicated, he could discover nothing certain on the subject; unless we wish to confound species with genera.

* *Ols. de Med. P. I. Remarq. sur le Phthis. en general. p. 2.*

52. We may with more reason refer to the *tuberculosis dorsalis* another species of the complaint, mentioned by Willis (*loc. cit.*), very different from that which he has adduced from the book *De Internis Affectionibus* (50.), and to be distinguished from the other species already described (45. 46. 47.). For he has seen some patients exceedingly distressed with a pain in the loins, nay, sometimes all over the back, who, after remaining for some time distressed in this manner, have become hunch-backed or lame, and have at length experienced an universal wasting, excepting in the head, as happens in the case of rickets. He is of opinion that a particular morbid humour, or matter, descending along with the nervous fluid through the spinal marrow, flows into the origins or trunks of the vertebral nerves, and, irritating the fibres, first creates a constant pain, and afterwards, in consequence of some of them being compressed or intimately deranged, the corresponding muscular fibres are resolved, while the antagonist muscles, becoming more strongly contracted, move the vertebræ, to which they are affixed, from their place, stretch and distort them, and, lastly, the nerves and muscular fibres being either paralysed or debilitated, the patients not only become lame, but likewise their limbs and whole body grow languid and sapless; which would not happen if the ligaments alone became relaxed by a morbid fluid. Nor must this complaint be supposed to attack children and young people

only, but likewise such as are advanced in life. For I myself have seen several adults affected with this complaint, whose vertebræ had become swelled, had fallen from their place, and become carious. I am therefore disposed to believe, that not only the nervous fluid, but likewise that of the bones, and the synovia and lymph, destined for the nourishment of the ligaments, in this disease are sometimes altered and corrupted.

53. But the tabes or consumptions proceeding from the whole system being affected (43.), or those which belong to the *atrophia nervosa* (49.), do not end here. For there are likewise some other species which proceed from *grief, nostalgia, love*, and other affections of the mind; from *hypochondriasis, hysteria, scurvy, lues venerea*, and *arthritis*; concerning which, as being in a great measure secondary, the limited plan of my work prevents me from speaking particularly. But they may be almost all referred either to diminution of the nervous influence, or to dryness of all the fibres, or to a morbid state or undue distribution, of the fluids. A very clear example of atrophy proceeding from the whole habit has been given by Delisle *, which is not of unfrequent occurrence in practice. In it the whole body wastes, although neither cough, fever, nor any difficulty of breathing be present. Those who fall into this consumption have a great aversion to food; never feel hunger, complain of great weakness of their

thighs and legs, and, their emaciation increasing daily, they pine away. Their belly is so much bound that they are obliged to keep it open by means of injections. Their tongue is covered with a clammy, thick mucus, or it is frequently parched. They are distressed with a perpetual burning within, which they can by no means allay. Their urine is sometimes red, sometimes pale, sometimes very scanty, and of a very deep colour. The region of the stomach, although it be neither tense nor swelled, when pressed is affected with a very acute pain. The abdominal muscles are frequently exceedingly tense. They are distressed with the most obstinate watching night and day; nor are they refreshed by their sleep. Their face is pale and livid, and sometimes disfigured with pustules. Their eyes are generally bleared, and the eye-lids for the most part glued together with matter. Their skin dry and obstructed. Their pulse is fine, and somewhat hard. All of which symptoms seem to indicate a scanty secretion of bile, and that a viscid, foul, and acrid collection of it takes place about the præcordia; that the blood abounds with acrimonies, is deprived of its bland and nutritious fluid; and that their whole solids are dry and sapless. Delisle has observed that those persons are most liable to this complaint who indulge to excess in heating, acrid, aromatic articles of diet, and in the drinking of wine and fermented liquors. Patients labouring under it, by having recourse

to timely medical advice, are frequently restored to their former health.

* *Traite de la Phthis. Pulmon.* c. xiv. p. 156. 164.

54. Hitherto I have confined my observations to the consumption which arises from an affection of the whole system. It remains for me to enumerate the other species of the complaint occasioned by the morbid state of a particular part, as by tumours, abscesses, and ulcers. But nothing is of more frequent occurrence than for a taint of the viscera, as the obstruction, scirrhus, suppuration, or ulceration, of the liver, stomach, kidneys, spleen, pancreas, mesentery, intestines, uterus, or bladder, to give rise to *phthisis hepatica, stomachalis, renalis, splenica, pancreatic, mesenterica, intestinalis, uterina, cystica*, and so forth. For these viscera, when affected with any morbid taint, and rendered incapable of performing their functions, either do not elaborate the nutritious juice properly, or impart ichor, pus, or sanies, or some putrid taint to the whole mass of blood, in consequence of which it becomes incapable of nourishing the body, or discharge their sound and useful fluids, thus gradually depriving the body of its due quantity of fluid, and occasioning its emaciation and decay; particularly

PHTHISIS PULMONALIS.

The lungs are liable to such a vitiated state, and contain the most frequent cause of consumption. Therefore the species of consumption which exhausts the body from such a cause is pro-

perly termed *phthisis pulmonalis*, that it may be distinguished from the others; nay, so well is it known, even among the common people, that the simple term *consumption* is frequently employed to denote that species the cause of which is contained in the lungs. But the real *phthisis pulmonalis*, according to the common opinion*, is that slow consumption of the whole body which succeeds to an ulcer of the lungs, and the constant fever depending upon it. But when the body is wasted in consequence of any other affection or taint of the lungs, as when they labour under very great *atony*, *flaccidity*, *wasting* †, *tubercles* ‡, *strumæ*, *scirrhus*, *congestions*, *calculi*, and other stony concretions, *vomicæ*, or *empyema* of the chest, and similar morbid states, in such cases also I am disposed, after Fracastor || and Willis §, to believe that phthisis pulmonalis is present, not the genuine and exquisite species of the complaint which I have already defined, but one which is in some measure *spurious* and *imperfect*. For although in it actual ulceration of the lungs be absent, still the effects and symptoms agree so much with those of real consumption, as to have the greatest resemblance to it, or at least, as Juncker also allows ¶, to render the transition to it exceedingly easy.

* Galen, *Defin. Med.* n. 260. 261. Aretæus, l. c. I. 8. p. 62. Aetius, *Tetrab.* ii. *serm.* 4. c. 67. Fernel. *Pathol.* l. v. c. x. p. 109. Car. Piso, *De Cogn. et Gur. Morb.* l. ii. c. x. Boerh. § 1196. Van Swiet. *ib.* in *Comment.* Morton *phthisiol.* l. ii. *De phthis. pulmon.* p. 26. Dupre' de Lille, *De la phthis. pulmon.* c. i. p. 5. &c.

† So great is the relaxation or atony of the lungs sometimes, that not only does a great quantity of fluids flow to them, and exude through the exhalants, interstices of the fibres, and invifible pores of the vessels, and exhaust almost the whole body by the quantity and frequency of the expectoration, but likewise the lungs secrete pus itself from the whole blood, on account of a particular diathesis of it, or generate the pus, and pour it out, without any ulceration. Instances of the lungs having been discovered intire in the bodies of patients who had long brought up a copious purulent expectoration, and had been considered as labouring under ulcerated lungs, may be found in the works of Bennet (*Theatr. tab. p. 96.*), of Morgagni (*De sed. et caus. epist. 22. n. 28.*), of Lieutaud (*Hist. anat. med. l. ii. obs. 404.*), of De Haen (*Rat. med. P. xii. c. vi. p. 250.* and in various other parts), of Callimír Medicus (*Collec. obs. med. pract. vol. i. p. 279. 230. & Com. Lips. suppl. 2. to dec. 2. p. 214.*), and other authors.

‡ Tubercles take place not only in the aspera arteria, in the bronchia, and lungs themselves, in consequence of the mucous follicles, cells, vesicles, or vessels, especially the lymphatics, being obstructed, but likewise grow externally upon the bronchia, especially when the conglobate glands, which, on account of being every where in the vicinity of the bronchia, are generally named *bronchial*, become morbidly affected, or indurated, or become filled with rough sand, or other cartilaginous, bony, or strong concretions, or turgid with an abscess; for which reason they are considered by Haller and others as being not an unfrequent cause of the most lingering phthisis. It is still a matter of dispute whether these glands only communicate with the lymphatic system, or pour any thing into the bronchia themselves. Morgagni and Fantoni deny that they do so; while Senac, Bergen, and Haller hold the opposite opinion. Be this as it may, it is a certain fact, at least in a morbid state, that when compressed they pour out the bluish or blackish humour with which they abound into the cavity of the bronchia, and mingle it with the mucus of the lungs. Nay, it is sometimes also observed in the expectoration of people in good health. These bronchial glands, therefore, when in a state of suppuration, will sometimes discharge purulent matter. See Haller, *Elem. phys. l. viii. sect. 2. § xv.*

|| *De morb. contag. l. ii. c. 9.* where the following words occur: "We may likewise with sufficient propriety name that species *phthisis*

which affects the lungs with corrupted and putrid phlegm, in such a manner that, if they be not ulcerated, they are rendered flaccid and putrid; for, on dissecting some bodies, I have observed sometimes part of the lungs sound, and in no respect vitiated, part not exactly putrid, or ulcerated, but flaccid and soft, and tending to waste; sometimes I have observed the whole lungs in this condition. When, therefore, such a wasting spreads to the lungs, we may with reason pronounce a person to be phthifical.

§ Willis, P. ii. sect. i. c. 6. where phthisis is defined to be *a wasting of the whole body, arising from a mal-conformation of the lungs.*

¶ *Med. conspect. tab. 34.*

55. Both the genuine and spurious complaint (54.) ought to be distinguished into primary and secondary, according as it originates from the lungs being primarily affected, without being preceded by any other disease, or as it succeeds to another disease, as scurvy, lues venerea, gout, hypochondriasis, or hysteria, scrofula, small-pox, measles, itch, herpes, scirrhus, cancer, and the like, in consequence of which it receives a particular name, being denominated *scorbutic, venereal, arthritic, hypochondriacal, hysterical, strumous, or scrofulous*, and so forth. To these De Haën adds, as having been seen by himself, the *phthisis cellularis, femoralis, coxaria, or ischiatica*, and others of a similar kind. Morton, again (*Phthisiolog.* l. 2.), chose to name that which we have called primary, *originaria, secondary, or symptomatic.* But it appears to me, as I have elsewhere mentioned, that a distinction may sometimes exist between the *secondary* and *symptomatic* complaint. For the *secondary* species may continue to exist although the disease, for instance hemoptysis, pleu-

rify, &c. from which it originated, may have entirely ceased; which is by no means the case with the *symptomatic* species, as the venereal, scorbutic, &c. since it cannot be a symptom of a disease which has disappeared, if in fact we are to consider a symptom as being the effect of a present cause, and not of a past one. Besides, there is no decline, whether arising from the whole habit, or from a taint of any part or viscus, which may not terminate in *secondary* or *symptomatic* phthisis pulmonalis. For the blood either degenerating in consequence of deficiency of proper aliment, or being infected with foreign or hurtful humours, whilst it passes through the delicate substance of the lungs, without being properly elaborated, on account of the relaxation of the parts, easily sticks there, and depositing its crude, acrid, and corroding liquors, which penetrate more deeply into the substance of the lungs, induces spasms, congestions, and tubercles, which first give rise to cough, difficulty of breathing, pain of the chest, hemoptysis, or inflammation, and, lastly, to suppuration, purulent spitting, ulceration, and genuine and confirmed phthisis pulmonalis. Moreover, according as it runs its course more or less rapidly, it is likewise called *acute* or *chronic*. For some phthisical patients are cut off in a very short period, while others, contrary to all expectation, drag out a very lingering existence.

56. Since, therefore, phthisis pulmonalis is not

always of the same degree of severity, and generally attains its height in a gradual manner, it is divided by some authors into three degrees. They say that the *first* is present when the lungs begin to be affected with congestion, are obstructed, and a kind of hectic heat is felt in them. That the *second* is present when they are covered with tubercles, which gradually proceed from an accumulation of coagulated lymph, or other crude matter. But on these tubercles becoming inflamed, and suppuration taking place, being converted into abscesses and ulcers, which sometimes discharge pus and blood, then the *third* degree is said to have commenced. But this division does not seem to be applicable to every species of phthisis pulmonalis, as every species does not uniformly arise from tubercles, although this happens most frequently; and consequently every phthisis pulmonalis does not observe the same manner of commencing and proceeding in its course. For those which proceed from hemoptysis alone, from pleurisy or peripneumony having undergone suppuration, or from an acrid and corroding humour, and similar causes, can by no means be accommodated to this division. Since, therefore, the variety of the causes occasions considerable difference in the nature of the complaint, in my opinion it is better divided into *incipient* and *confirmed*. To the incipient may be referred, the *spurious* and *imperfect* species, together with the *tubercular* and *scurrhous* (54.); to the confirmed, the *genuine*, and

exquisite, or *ulcerous*. But as the confirmed or ulcerous complaint likewise gradually goes through its stages, until it arrives at its fatal termination, in order to exhibit its various states in a clear point of view, it is with better reason divided into three degrees, indicated by the difference of the ulceration and emaciation. The *first* is said to be present when the lungs begin to be in some measure ulcerated, and the extenuation of the body is not very obvious. The *second*, when the ulceration and emaciation appear more evidently. And, lastly, the *third*, when the pus is diffused over the whole system, and the ulcer spreads wider, inso-much that all the fluids being as it were melted, the bones appear only covered with the skin *.

* Dupre' de Lisle, *De la phthis. pulm.* p. 11. 285. et seq.

57. But every ulcer of the lungs does not immediately give rise to genuine phthisis, unless it occasions emaciation and a slow fever (54.) ; for it is by no means a rare occurrence, as almost all physicians know, for some patients to cough up matter from the lungs, which is sometimes yellow, sometimes viscid and glutinous, sometimes purulent, and even streaked with blood, who neither exhibit any very remarkable emaciation, nor labour under a constant slow fever, or any other great inconvenience, until after a great length of time, so that they appear to lead a tolerably secure life. It is probable, however, that in the lungs of such persons there is an ulcer of some kind, but covered with a *callus* or *gluten*, in such a

manner that it can neither spread wider, nor does it occasion great loss of nourishment, or impart any pus to the blood. It is probable that such an ulcer is borne like an issue or cautery. I have seen it protracted in some patients for forty years, nay, to old age itself. And although I thought that I had discovered something of a phthysical habit in them, still they were sufficiently capable of attending to the affairs of life. There is a great resemblance between such patients and those who are carried off very gradually by *chronic phthisis*. But these last, although very gradually, nevertheless decline daily, and are not free from a slow fever. Some authors also imagine * that *ulcers of the larynx*, and of the *aspera arteria*, because they are not seated in the lungs, ought to be excluded from phthisis. But the body is frequently reduced by them also, and a slow fever occasioned, by which all the nutritious matter is consumed. For the lungs are generally affected at the same time, or the taint is shortly propagated to them. I am of opinion, therefore, that this phthisis, if not *pulmonary*, at any rate may be named *trachealis*.

* Morgagn. *Epist. anat. med.* xxii. n. 27.

58. Enough concerning the varieties of the complaint. It is necessary, in the next place, to investigate the causes of a disease so very difficult of cure, and of such frequent occurrence. Its proximate cause, if I mistake not, is comprehended by whatever obstructs, distends, relaxes,

irritates, corrodes, inflames, or lacerates the lungs and the neighbouring parts, in consequence of which a purulent ulcer at length arises. But this does not readily happen, unless the predisposing and exciting causes concur with it. Of the predisposing causes the chief are, the period of life between eighteen and thirty-five* ; a delicate organization of the lungs and whole body ; a mal-conformation of the chest ; the sanguine and choleric temperament ; plethora ; a bad state of the fluids, arising from various causes ; various acrimonies of the fluids ; and an hereditary taint. The exciting causes are, violent emotions of mind ; excessive study, especially by night ; long continued watching ; bad living ; too great indolence or activity ; premature venery ; a thick, damp, marshy situation, exposed to sudden vicissitudes of weather, or too rarified, light, and elevated an atmosphere † ; a dry summer, with the north-wind prevailing, succeeded by a rainy autumn, and a continuation of the south-wind ‡ ; cold suddenly succeeding to heat ; blows, contusions, and wounds ; extraneous bodies falling or inhaled into the aspera arteria ; great straining of the voice ; violent efforts ; keeping in the breath long ; poisons ; the noxious effluvia of coals || ; those arising from metals and acids, as the nitrous and vitriolic § ; a cough, defluxion, catarrh, and very frequently the omitting of bleeding in these last ; hemoptysis ; pleurisy or perip-

neumony being imperfectly resolved ¶, or terminating in suppuration; scurvy; scrofula; lues venerea; hypochondriasis and hysteria; morbid translations; the suppression of usual evacuations **; herpes, small-pox, measles, and other cuticular complaints being forced in; and, lastly, contagion, if we abide by the common opinion ††.

* Hippocr. aph. 9. sect. 5. & aph. 7. sect. 8. † Rozier de la Chassagne, *Manuel des pulmoniq.* p. 282. 283. ‡ Hippocr. aph. 13. sect. 3. & aph. 22. sect. 3. ¶ Rozier de la Chassagne, *Manuel des pulmoniq.* p. 281. Van Helmont, *Oper.* p. 200. § Hippocr. aph. 12. sect. 6. ¶¶ *Idem*, aph. 15. sect. 7. & *Cœac.* n. 438.
 ** *Id*, aph. 15. sect. 5.

†† Morgagni (*Epist. anat. med.* xxii.) declares himself in favour of those who consider phthisis as contagious. Van Swieten confirms the same opinion by adducing instances of it. Antonio Cocchi, however, and lately Castellani, Professor of the Practice at Mantua, have endeavoured to support the opposite opinion. In Tuscany, however, notwithstanding that the College of Physicians have pronounced phthisis to be free of contagion, it has been ordained by law, that the apartments, cloaths, and other things which have been used by consumptive patients, shall be purified, the old partitions being taken down, and new ones erected in their stead, and every thing else committed to the flames.

THE DIAGNOSIS.

59. BUT as phthisis, when once present, can scarcely be removed, it is of the utmost consequence to foresee and prevent it before it commences its attack. Its future appearance may be apprehended from the patient's being born of phthisical parents; from his having a narrow, flat chest; high shoulders; a long small neck; from

his being of tall stature ; from his having a weak or hollow voice ; a fine skin ; from his being of a fair complexion, and having a beautiful rosy complexion ; from his being of a slender habit ; from premature acuteness of judgment ; from his being hunch-backed, and expectorating a great quantity of phlegm, especially in the morning ; from his being frequently subject to catarrhal affections ; and, lastly, from preceding diseases *. That the complaint has begun, is generally indicated chiefly by three symptoms : namely, a constant cough ; hectic fever, which is aggravated after meals, and sometimes intermits in the morning ; and wasting of the muscular parts. The cough at the beginning is frequently mild indeed, sometimes dry, sometimes moist, and like a catarrhal one, and afterwards becoming more troublesome, especially after meals, insomuch that it not unfrequently is followed by vomiting of the food, whether this be derived from the œsophagus being irritated at the same time, or from the stomach being compressed, in consequence of the violent contraction of the diaphragm and abdomen. Morton is of opinion that this particular symptom distinguishes the phthisical from the catarrhal cough ; and still more certainly if to it be added loathing of food ; thirst ; a viscid, thick expectoration of various colours, sometimes streaked with blood, and of a salt, or sweet, or bitter, or any other foreign

taste ; a sense of weight in the chest, especially where the injury is seated ; unusual oppression ; difficulty of lying on either side, exciting cough ; sometimes a dull pain in a particular part ; the respiration somewhat laborious, especially after walking quick, or mounting stairs ; slight sweats, at night or in the morning ; raised and tense hypochondres, oppressed with a sense of weight ; and, lastly, hastiness of temper, or a tendency to lowness of spirits. The fever at first is attended with scarcely any quickness of pulse, afterwards increases gradually, without exceeding the form of a *slow* or *hectic* fever. It is accompanied with very manifest heat externally, particularly in the palms of the hands and soles of the feet, with watching, and occasional flushing of the cheeks. In the mean time the urine is scanty, and deep-coloured, and readily becomes turbid. The emaciation at the beginning of the disease is generally slight, and goes on slowly, and scarce perceptibly. But when the fever increases, when the appetite is lost, the digestion vitiated, as well as the juice with which the body ought to be nourished ; then the patient falls off most rapidly, being shortly brought down to a mere skeleton.

* Hippocr. aph. 15. sect. 5. & *Coar.* n. 17. 438. 444. 469.

60. Whenever it lays aside the appearance of a slow fever (59.), and, becoming more acute, resembles a pleuritic or peripneumonic one, or has accessions like those of intermitting fevers, but vague and anomalous,—which is a symptom pe-

cular to suppuration,—and real pus begins to be spit up; there is then no doubt that confirmed consumption is present. For in a short time the greatest degree of colliquation arises over the whole body, both in consequence of the violent motion of the fever, and from pus being absorbed into the veins. Hence the sweats, especially those occurring at night and in the morning, are aggravated, and become almost constant, frequently alternating with a diarrhœa; the urine is discharged in greater quantity, and frequently exhibits melted fat floating on its surface. On which account a very rapid loss of strength, and the most extreme degree of emaciation, succeed. With regard to the spitting of blood, as I have already observed (54.), it has not unfrequently happened that, after a long-continued purulent expectoration accompanying a troublesome cough, the lungs, on being opened, have exhibited no appearance of ulceration. Which is confirmed by Cassimir Medicus (*Obs. Med.* vol. i. p. 279. to 320.), who, upon dissecting dead bodies after purulent expectoration, very seldom found the lungs ulcerated, but frequently indurated; sometimes without any taint, although the patients had daily coughed up a great quantity of pus; while, on the contrary, he discovered a collection of liquid pus in the abdominal cavity. It is necessary, however, to guard against setting down that for pus which is by no means so; nor must

the lungs be dissected negligently, for they frequently abound with small ulcers and abscesses scattered here and there over their surface, and scarcely observable, from whence a discharge of pus might have taken place, notwithstanding that the substance of the lungs afterwards might appear to be sound. But this is an error into which skilful and experienced practitioners are in no danger of falling.

61. Moreover, as the disease is hastening to its fatal termination, aphthæ break out in the mouth, palate, and fauces, occasioning pain and heat when the patient attempts to swallow; the voice becomes hoarse, nay, is sometimes entirely lost; a fetid smell proceeds not only from the mouth, but from the whole body; sometimes pustules are formed upon the metacarpi; the hair falls out; the nails become adunque; the temples collapse; the eyes become hollow, the nostrils thin; the feet and hands swell; the bones are covered almost only with the skin; the expectoration stops; the discourse becomes incoherent (*Coac. n. 437. Hipp. aph. 17. sect. 7.*); the cough ceases; but the greatest difficulty of breathing and anxiety are present; the pulse is languid and weak, intermits, and at length ceases; and then death, while the patient still entertains some hopes,—for in no disease are the patients more buoyed up with false hopes,—gradually comes on, and puts a period to his sufferings. But death most frequently occurs unexpectedly, either while the patient is

shifting his situation in bed, or when a sudden change of weather takes place to hot or cold, as if it came on by stealth. The lungs of such patients are generally found consumed, corroded, and excavated, with large hollows in them. Sometimes also an affusion of pus into the cavity of the thorax, corroding and corrupting all the parts, is found. It at times happens that the phthifical patient is attacked with a most acute pain of the side affected, which yields to no remedy. I have more than once discovered on dissection, that this takes place in consequence of pus penetrating into the pleura, and corroding it, and vellicating the nerves which come from above, together with the neighbouring muscles.

62. But the nature of the *phthisis trachealis* is different. This complaint, consisting of ulcers of the larynx and trachea (57.), is preceded by a long-continued discharge of acrid or salt humour; by an herpetic or scorbutic taint; by a spitting of blood conjoined with other symptoms (23.); and by a slight cough and titillation, chiefly affecting the larynx. But the same cough and titillation accompany the pain or heat at the top of the aspera arteria; a spitting of saliva, which is scanty, frothy, not concocted, and sometimes mixed with purulent and white streaks, and sometimes with streaks of blood, sometimes truly purulent and sanious, sometimes inodorous, sometimes slightly fetid, but having the peculiar smell of

pus; hoarseness; aphonia; and some extenuation of the body, particularly of the hands and fingers. Besides, there are present symptoms of the future appearance of phthisis (59.); but the following symptoms are absent, namely, the oppression of the chest; the difficulty of lying down; the difficulty of breathing is not felt, even when mounting a pair of stairs; deep-seated cough; and constant fever, or, if there be any present, it is so inconsiderable that it sometimes appears to be intirely wanting. Linctusses and troches kept in the mouth, and swallowed gradually, are very efficacious in allaying the heat, prickling, and cough. At length, when the complaint advances, the bronchia, and likewise the lungs, become ulcerated, and it terminates in actual phthisis pulmonalis.

63. Moreover, the species of phthisis which is occasioned by *scirrhus*, *crude tubercles*, and *indurations* of the lungs, has some marks peculiar to it, by which it may be distinguished from the others. It is generally attended with a dry cough, which is very troublesome, and alleviated neither by oily, nor pectoral, nor paregoric remedies. If any thing during the progress of the disease be coughed up, it is scanty, frothy, and very like water in which soap has been dissolved, and generally continues so even to the end of the disease; unless, as not unfrequently happens, the cough be succeeded by hemoptysis, in which a bloody expectoration afterwards supervenes, mixed

with crude, lymphatic matter. Besides, those who labour under this species of phthisis not only make short and frequent inspirations, but are likewise obliged to draw their breath by inclining their breast forwards, and are sensible of a frequent pricking sensation in different parts of the chest; while the fever is generally neither violent nor constant. Frequently the glands of the neck or axillæ, and those of other parts, swell and assume a scrofulous appearance. From which we may conjecture, that similar effects take place in the lungs. Let these marks be understood of scirrhus, strumous, and indurated lungs. Besides, there is a tubercle of the lungs, of which authors make mention, not, as in the former case, affecting the whole lungs, but only some part, and which is capable of suppuration. According to Baglivi (*Prax. Med.* l. 2. c. 8.), those who are affected with this disease, “ though in other respects well, begin to breathe with difficulty; the difficulty of breathing is gradually increased; their respiration is not stertorous, and they do not expectorate any thing; they likewise feel a constant pain in the chest, and cannot lie upon the part affected; they are troubled with a dry cough: at length the cheeks grow red; a slight fever comes on; and, as suppuration approaches, other symptoms of it supervene. But two pathognomonic symptoms of the tubercle being still crude and incipient are, a dry cough and slight pain on one or other side of the chest, agreeably to the remark

of Hippocrates: *So long as the tubercle remains still crude, it occasions a slight pain and dry cough.*" (L. 1. *De Morb.*).

64. Although it has already been shewn, that both in incipient and confirmed phthisis the respiration is injured, and the breast more or less affected in some part with pain; this does not hold so universally but that sometimes both symptoms are absent. This frequently happens in that species of phthisis which has been occasioned merely by hemoptysis, without any other morbid state of the lungs. In addition to the cough, spitting of blood, fever, and emaciation, the patient scarcely ever complains of pain or dyspnœa. Nay, the patients for the most part, because they seem to themselves to breathe well, and have no pain any where, nor lie down with difficulty, will scarce allow themselves to be persuaded that there is in fact an ulcer in their lungs. Nor is it an uncommon thing for the pain to be wanting in the other species of phthisis also; for after death great part of the lungs has been found corrupted, corroded, or in a state of suppuration, without the patient's having experienced any pain. This seems to be owing to the slow corruption of the lungs, or to their sensibility being diminished or altogether lost, on account of some peculiar morbid state. An ulcerated state of the lungs, therefore, is not incompatible with the absence of pain. By what signs the phthisis *pituitosa* may be distinguished from the other species of the

complaint, will readily appear from the marks which have already been enumerated (49.).

THE PROGNOSIS.

65. If there be any hopes of a cure in phthisis pulmonalis, they seem to have place only in the incipient stage; for the confirmed species scarcely ever admits of a cure. For the ulcer is constantly exposed to the action of the air; is situate in a part from which the pus cannot be easily brought off, which is always thrown into commotion, and never at rest, and frequently violently shaken by the cough itself; and abounding with tumours it scarcely can ever heal up. If, however, it be recent; if the pus be readily discharged, white, smooth, equal, and not fetid; if no fever, or only a slight one, accompany it; if the cough do not prove very distressing; if the appetite be good, accompanied with a good, or moderately good habit of body, and full chest; and symptoms of phthisical colliquation do not still appear; we may then in some measure expect a favourable termination, particularly when the ulcer has been occasioned by pleurisy or peripneumony undergoing suppuration (*Coac.* 402.). For physicians have more than once observed species of phthisis arising from this cause terminate favourably. When the opposite of these symptoms occur, a contrary prognosis is formed. On the whole, the *hereditary* phthisis, or that occasioned by a mal-conformation of the chest, or which is

communicated by contagion, generally defies the power of medicine. However, it may be sometimes avoided if timely assistance be called in. That which arises from the whole habit of body (43. 53.) is more easily cured than that which is named *originaria*, or *primary* (55.). Likewise the *original* phthisis is more dangerous than the *symptomatic* (55.); as also that one is attended with more danger which arrives soonest at the state of colliquation (60.). The species which supervenes upon *hemoptysis*, unless it has arisen from a blow, or from the effort of spitting up blood, generally proves fatal (*Coac.* 438.). It is likewise a very hopeless case if the complaint be owing to calculi, stones, or rough bones growing in the lungs (54.), because, as Bennet observes (*Theatr. Tab.* p. 100.), the lungs themselves are lacerated by them; nor can they be made to unite again, unless, as sometimes happens, these bodies are expelled by the cough. The phthisis *trachealis* (57.) is sometimes cured; if immediately at the very beginning it be properly treated, or if it proceed from the venereal virus.

66. The marks which follow are common to every species of consumption. Nothing is more pernicious to consumptive persons than the diarrhoea *. It is likewise a very bad symptom if they spit up a great deal of crude matter, without any alleviation of the difficulty of breathing †. They run greater risk in the autumn, and during warm rainy weather ‡, than at other seasons of

the year. When they are seized occasionally with rigors, it is a proof of the near approach of death ||. When a diarrhœa has continued a long time, together with wasting of the body, if it suddenly stop, and the præcordia become raised, it affords an unfavourable prognostic §. Hippocrates ¶ pronounced it to be a fatal symptom if the expectoration of phthisical patients be attended with great fœtor, together with falling out of the hair, or if, when the matter expectorated is thrown into sea-water or salt-water**, it sinks to the bottom. Hence, according to Celsus, has arisen the opinion of some who affirm †† that the purulent expectoration is to be distinguished from that which is not purulent, by these two marks. But by these marks the bad disposition of the pus only is indicated, not the pus itself, as the words of Hippocrates declare, and as Morgagni has properly remarked. And this appears more manifestly from the circumstance, that Hippocrates, elsewhere enumerating the marks of good-conditioned pus, has observed that it ought to be white, inodorous, and smooth. Moreover, if by such trials the nature of pus were to be discovered, many things seem to evince that such a mode of ascertaining it is uncertain and fallacious. For the matter expectorated by scorbutic persons, although it be not purulent, is nevertheless generally fetid, and more so if it be placed on live coal, for whatever has an animal nature when put upon the fire emits a disagreeable smell. It is likewise

generally salt, and therefore heavier ; and if it be deprived, by shaking it, of its air-bubbles, it becomes so heavy, that when thrown into salt water, not to say common water, especially when warm, although not purulent, it readily falls to the bottom. Nothing, therefore, more certainly points out the nature of genuine pus than the combination of several symptoms, contrary to what some suppose, relying upon a doubtful passage of Aretæus ††. These are the symptoms peculiar to the expectoration : A cineritious or yellowish colour, a particular manner of cohering, by which the lymph and phlegm separate, and when poured upon water divide into threads and flakes ; the phenomena of preceding or present suppuration, and the like, which cannot escape the notice of an experienced practitioner. Nor is the lightness of the expectoration any objection ; for actual pus may be light if it be of a laudable kind, so as to readily float not only upon the surface of water impregnated with salt, or sea-water, but also of common pure water, which is lighter. Its fetor, therefore, weight, or bad taste, indicate a worse disposition or quality of the pus, but do not point out its nature. Nor do I think that whatever flows from an ulcer is to be named pus, as both sanies and ichor of various kinds are frequently discharged by ulcers. Sanious and ichorous expectoration, therefore, must be carefully distinguished from that which is purulent. And, lastly, the expectoration which only in external

appearance resembles that of pus, is not to be considered as purulent; for the mucous and coagulable fluids by stagnation and heat may become so concocted as to resemble pus itself. The expectoration is then more properly named *puriform*.

* Hippocr. aph. 14. sect. 5. *Coac.* n. 436. † *Coac.* n. 445.
 ‡ Aph. 10. sect. 3. || *Coac.* n. 443. § *Coac.* n. 287. 442.
 ¶ Aph. 10. sect. 5. *Coac.* n. 434. ** *Coac.* n. 435.
 †† Lib. iii. c. 22. n. 25. ‡‡ Morgag. *Epist. anat. med.* xxii.
 Rozier de la Chassagne, *Malad. de la poitrine*, p. 255.

67. As, therefore, phthisis is a disease which, when of long standing, is removed with the utmost difficulty, its progress must be early opposed. But in the great variety of the causes and species of the complaint (58.), no plan of treatment can be adopted so universally as to be accommodated to the different causes and varieties of phthisis, and to their different stages or degrees. In general, however, it is necessary to remove the cause by which the defect or vitiation of the nutriment is occasioned, or its apposition to the parts to be nourished prevented; to remove the diseases from which the consumption originates; to correct the acrimony of the blood; to prevent obstructions and congestions, or to discuss them when already present, that they may not give rise to inflammation, suppuration, and ulceration; and, lastly, to strengthen the whole system, or particular parts of it which are in a state of relaxation.

THE CURE.

68. THE consumption, therefore, which arises from the causes enumerated (43. 44.), requires those remedies which remove tumours, fungus, scirrhus, ulcers, rigidity, callus, stricture, paralysis, or other morbid conditions of the œsophagus and stomach, from which I have mentioned dysphagia proceeds (*Chap. on Dysphagia*); fuller, or more nutritious diet; aperients; saponaceous remedies; gentle purges, especially those composed of rhubarb; and, lastly, strengthening remedies, or those which are calculated for checking excessive evacuations of every kind.

69. In the cure of the first species of *tuberculosis* (45.), if the precepts of Hippocrates deserve to be regarded, we must immediately, at the commencement of the disease, have recourse to emetics and cathartics, and next to the copious employment of whey, or asses milk, and, lastly, of cows milk, for forty days; and for supper ought to be given, alica, or, what is at present in greater use, rice or barley gruel, or pottage of the flour of oats or sago, and the like. Likewise delicate flesh, especially roasted fowls, and fresh eggs may be allowed. Nor in the mean time must we neglect fomentations and the warm bath. But to these some prefer the cold bath, bark, and steel, as restoring tone and vigour to the relaxed fibres and whole system. Tissot relies chiefly upon these in the treatment of this complaint*. And

Grainger asserts that steel possesses such virtue, that he never discovered a remedy comparable to it. Likewise Frid. Casim. Medicus †, recommends steel-filings in the tabes dorsalis ‡, but prescribes along with them the employment of copious drinking. Moreover, it is necessary to abstain for a year from intoxication, from venery, from excessive labour, although walking, and from moderate riding in a carriage or on horseback, care proper, attention being paid to avoiding the scorching heat of the sun, or too great cold.

* Onanism. † Ludwig, *Com. de reb. in scient. nat. et med. gest.*
vol. iv. p. 236. ‡ *Id. ib.* suppl. to dec. ii. p. 223.

70. Nor is the treatment of the second tabes dorsalis very different (46.), in which, however, both white wine, fish, and food which keeps the belly open, and milk with honey, for forty-five days, are allowed, as we learn from the book *De Internis Affectionibus*. It is there also prescribed, if the body become swelled, to burn different parts of the neck, back, and loins, so as to form crusts upon them: for, in consequence of this succeeding properly, the health is restored. For the purpose of de-obstructing the viscera, and strengthening the whole body, particularly the nervous system, may be employed, for a great length of time, the neutral salts, as the *sal mirabilis Glauberi*, or the *sal polychrestus*, or vitriolated tartar, with an infusion of valerian-root, or along with its decoction, extract, or powder, as not a few patients have been observed to recover in that

way from this species of tabes; especially if venery have been abstained from, and exercise of body substituted in its place. Both in this and in the preceding species, while the patients employ the peruvian bark and other tonics, the best thing which can be given for drink is the *ptisana Dalisbii*, which is composed as follows:—Rec. *Mala citrea* n. ij. *Eviscerentur, deinde cont. in mortar. marmor. et sensim affund. decoct. bord. lib. ij. panis tost. unc. ij. syrup. moror. j. vin. veter. optim. unc. vj.*

71. In the third *tabes dorsalis* (47.) those remedies seem to be proper which remove the primary disease, namely, *gonorrhæa*, or *fluor albus*. But if the complaint be occasioned by an impure connection, mercury, the decoctions of the woods, and milk, are of service. If otherwise, a method of treatment adapted to the variety of the causes from which the disease has sprung, must be adopted. Our object must always be to correct and check the putrid flow by which the body is wasted. Purgings, medicated waters, particularly chalybeate and gently balsamic and vulnerary remedies, are very much approved of. Nor must I here omit the cold-bath, of which most authors of the present day make mention.

72. When the *tabes* or *atrophia* from inanition is occasioned by other immoderate evacuations (15.), the cure of the diseases by which it is kept up must be commenced, and the defect of nourishment obviated by proper diet. But if the con-

sumption be occasioned by depraved or imperfect digestion, or chylification (48.), it is proper to have recourse to bitters, inciding remedies, and pectoral tonics. But when a dyscrasy and bad disposition of the blood perverts and corrupts the nutritious matter, such a morbid state, which is pointed out by the symptoms peculiar to it, must be removed. Lastly, when the tabes is occasioned by a morbid state of the solids, and the species of disease named by Morton *atrophia nervosa* (49.) arises, the power of the nerves and other solids is to be roused, especially by cordials, gentle aromatics, ferulaceous gums, antiscorbutic remedies, those prepared from vipers, chalybeates, frictions, exercise, long journeys, swimming, and by the most nutritious and easily digested food. The English are principally liable to this complaint, of which they frequently get rid by traveling into distant countries. Concerning this phthisis, I imagine that Sydenham speaks when he asserts, "that riding is as efficacious in the cure of phthisis as bark in that of intermitting fevers." But the opposite method of cure is to be adopted in the *tabes senilis*, or any other species of the complaint arising from too great rigidity, and, as it were, *callousness* of the solids, in order that they may be softened, relaxed, and rendered penetrable by the fluids flowing into them. On which account the tepid bath, anointing the patient, gentle friction, the soup of frogs and turtles, oaten gruel,

and especially whey, nay, asses milk, which Sydenham and others propose for averting the evils of old age, will be advantageously called in.

73. But in the *tabes* or *atrophia nervosa*, arising from the whole habit, which has been improperly considered by some as a *tabes dorsalis* (50.), when it ought rather to be named *secondary incipient phthisis pulmonalis*, whether it be conjoined with obstruction of the spinal marrow or not, the cure intirely rests on inciding, aperient, resolving remedies, and those which attenuate the fluids, and impart strength to the fibres. Wherefore, as the author of the book *De Internis Affectionibus* prescribes vomiting, it ought to be excited first by drinking vinegar and water, and by means of a feather dipped in oil thrust into the fauces ; after which the juice, both of beet boiled along with honey, and that of cabbage boiled with salt, may be drunk for a month. Next, interposing one month, during which the patient may eat animal food and drink wine, for another month he may use odoriferous and gently aromatic and stimulant herbs, as rue, anise, mint, corriander, basil, parsley-roots, and the like ; as attenuating and resolving the viscid humours, exciting the action of all the vessels, and in some measure rousing the nerves. He may likewise occasionally employ fomentations, or the tepid bath, that by increasing the perspiration the whole body may be purified. He ought every day to take exercise at stated hours, increasing it gradually,

until he at length extend his walk to 150 stadia * each day. In the mean time he may drink wine, first white and sweet, and afterwards red and austere, and eat flesh and victuals gradually more nourishing, fattening, and cartilaginous. For when treated in this way he may expect to be restored to health in a twelvemonth. Raulin (*Obs. de Med. Art.* v. p. 61.) found this method of treatment to be consistent with reason, and of the greatest utility, as resting upon certain indications; which, however, in the great variety of articles in the *Materia Medica*, every one will be at liberty to fulfil by different medicines at pleasure.

* A stadium is 125 paces.

74. Lastly, the fourth *tabes dorsalis* (52.), which, in my opinion, if it be not the same as the *rhachitis*, or *rhachialgia*, of modern writers, at any rate is exceedingly like it, requires the same method of treatment. It must therefore be opposed by bitters, antacids, aperients, by gummy and diaphoretic means, by hot springs and chalybeate waters, and by strengthening remedies. Nor is it improper to restore the tone of the system by friction and exercise; and the patient ought to breathe as much as possible the dry air of the plains, and to use simple, nourishing, and delicate diet. Rhubarb, in particular, with salt of tartar, tincture of antimony, the root of the *Osmunda regalis*, of turmeric, madder, and wild

valerian, gum-sagapenum, assafoetida *, or the flowers of sal ammoniac, with steel, are believed to possess great efficacy in this disease. But the complaint generally defies all medical aid, and, after long continued pains, spasms, paresis of the limbs, bladder, anus, and the like, which gradually reduce the patient to a state of *marasmus*, terminates in death. I never saw it perfectly cured, although I have seen it so mitigated as to spare the patient's life for some years. Moreover, the *atrophia nervosa* (53.), as it is occasioned by an acrid dyscrasy of the fluids, sluggishness and defect of bile, and rigidity of the fibres, is usually treated by means of diluent, correcting, and saponaceous remedies, as a ptilan of the roots of grass, taraxacum, succory, and agrimony, with the addition of some neutral or subacid salt; by means of the juices of these plants with whey; by medicated, acidulous waters, slightly impregnated with steel and fixed air; by anodyne emulsions; by the tepid bath, and a bland vegetable diet. Likewise gentle emollient injections, travelling, amusement, and exercise, are of the highest advantage in this disease. The species of the complaint, again, which is kept up by love or nostalgia, requires gratification, or expostulating and soothing the patient's mind. The *secondary* species, occasioned by hysteria or hypochondriasis, must be treated like the primary disease.

* See *Dissert. de assafoetida*, Joh. Pundt. Goetting. 1778.

75. But I must now proceed to the cure of phthisis pulmonalis (54.). In it we ought to endeavour to prevent any ulceration, or, when the lungs have already become ulcerated, to attempt the healing up of the ulcers with the greatest dispatch. Of which the first indication applies to the *incipient* phthisis (54. 56. 59.), the second to the confirmed (56. 60.). Hence, to remove all apprehension of ulceration taking place in the incipient complaint, a copious afflux of humours to the lungs must be checked, congestions discussed, obstructions removed, tubercles dissolved, any tendency to inflammation obviated, and every acrimony of the blood, or other vitiation of it, corrected.

76. It is therefore proper to gently purge the belly, repeating it several times at intervals*; to occasionally let blood sparingly, but at separate intervals, especially when any apprehension of suppuration is to be removed,—which the experience† of distinguished authors has shewn to be a remedy, not only in threatening or *incipient* phthisis, but likewise in that which is disposed to degenerate into the *confirmed* complaint,—to derive the morbid matter from the chest by means of blisters, issues, fomentations, the hot-bath, diuretics, and sudorifics; to employ with caution diluent, attenuant, inciding, and aperient remedies; to assuage the spasmodic and convulsive contractions and irritation of the cough, by demulcent

and oily remedies, and those which act as sheathers; and, lastly, to strengthen the system and lungs by means of very nourishing and bland things. Among the diluent, attenuant, and aperient remedies, the lowest rank is not held by the warm, acidulous, mineral waters. But in the employment of them we must use caution that the lungs may not be weakened more and more by taking them in too great quantity, or, if they have already suffered ulceration, that their sensibility or irritability may not be roused, which is attended with no small injury to the patient, and which, it has sometimes been observed, is principally occasioned by the acidulous spring-waters. Some, therefore, endeavour to correct them by the addition of milk. Desfault endeavours to resolve the tubercles, by which, he is of opinion, this phthisis is always produced, by the use of mercury, iron, or steel, and millepedes, above which he prescribes to be drunk a decoction of the root of nettles, and of the juice of water nose-smart, and cheveril, of each two ounces, and at the same time recommends riding at mid-day ‡. Lancisi also endeavoured to resolve the crude tubercles by means of sweet mercury seven times sublimated, but given in small and repeated doses. Nay, Brilouet || evidently restored to health a woman and man labouring under confirmed consumption of the lungs, by the corrosive sublimate, after the manner of Van Swieten, and by the juice of water nose-smart. The efficacy of

this remedy in the removal of this species of phthisis is completely confirmed by its frequent use, and the excellent effects which are generally experienced from it in *Lorrain* §.

* Ferneiius's excellent composition for purging the belly is as follows :---Rec. Man. elect. unc. j. Solv. in s. q. aq. com. add. aq. Cassiæ decoct. unc. j. Olei amyg. dulc. unc. j. M. in mort. marm. exacte. Dos. in cochl. j. singulis iv. horis vel j. mane, et vesp. item.

+ Dovar & Cohausen, *Edinb. med. essays*, vol. iv. Van Swieten on Boerhaave, aph. § 1210. Ludwig, *Com. de reb. in scien. nat. et med. gest.* vol. ii. p. 401. Bisset, *ibid.* vol. v. p. 617. ‡ *Edinb. med. essays*, vol. vii. p. 121. || *Journ. de med. Nov.* 1777. § Clerc, *Hist. nat. de l'homme*, vol. ii. p. 35.

77. In *confirmed consumption*, however (56. 60.), when the lungs are at length consumed by an ulcer which communicates a purulent taint to the blood, it is better in that case to abstain from bleeding; unless a pleuritic pain, violent fever, and difficult respiration, indicating a fresh suppuration, require it; to cleanse the ulcer by sweet and saponaceous remedies, and such as excite an expectoration; to oppose the corruption by subacid and vulnerary antiseptics; and, lastly, to induce a cicatrix by the mildest exciting balsams. The *dulcamara*, or *solanum scandens*, is with reason celebrated on account of exciting an expectoration; from using a decoction of which Werlhof, when labouring under an ulcer of the lungs, derived great advantage, and at length recovered (Clerc, l. c. p. 35. 36.). But a great quantity of pus is expelled by its stalks when boiled in water, and thus the ulcers of the lungs are very power-

fully cleansed. To the class of drying and balsamic remedies ought to be referred, agreeable and strong-smelling perfumes * ; dry pure air ; sugar of red roses ; lime-water, both simple and compound ; the vulnerary plants, as fanicle, milfoil, ground-ivy, comfrey, betony, the tops of the *Hypericum equisetum*, agrimony, and the like. With regard to roses, Clerc † affirms, that in Spain phthisis and slow fevers used to be cured after the method of Avenzoar, namely, by the copious use of conserve of damask-roses, by a milk diet, and hydrogala given for drink. *Ornithogalon*, commonly called *lac gallinæ*, would well deserve becoming the subject of experiment in the hands of a judicious physician. For it is highly commended by Harvey, for the cure of ulcerous consumption ‡, as being antacid, abstergent, and gently drying. In Transylvania the inhabitants employ an infusion of sun-flower or dwarf-cistus, with white or yellow flowers, by means of which alone, as Cromer mentions ||, they are successful in removing consumptions attended with a spitting of blood and pus, together with difficult respiration. This infusion, if it be a strong one, excites nausea and vomiting.

* Bennet, Willis, Nic. Piso, and other authors, make mention of the utility of perfumes in the cure of phthisis. Billard, as we are informed by Louis (*Mém. de l'acad. roy. de chir.* vol. v. 1774, p. 549.), extols their efficacy, and adduces examples in their favour. He considers moist perfumes as being hurtful, on account of the relaxation of the lungs. He affirms that balsamic vapours are extremely beneficial. He takes one pound of yellow fresh wax, and an

equal weight of common resin, or dry pitch, or, which is better, of turpentine, and places them in an earthen vessel, upon a fire in the middle of the bed-chamber where the patient sleeps, and thus the air is impregnated with medicated vapours. Likewise some Canadian, or peruvian, or other balsam, may be added. From having experienced the success of them, he places much reliance on these vapours; but he does not condemn moist perfumes and vapours, even in the *dry pectoral cough*, which is, as it were, the forerunner of phthisis, in *dry or convulsive asthma*, or in *vomica*.

+ *Id. ib.* † *De art. cur. morb. expect.* p. 230. || *Commerc. Norimb. ann.* 1732. p. 19. & *ann.* 1738. hebdom. 3.

78. But nothing is allowed, by almost universal consent, to be more efficacious than milk itself, both for blunting acrimonies and nourishing the body, and also for uniting the lips of the ulcers. Hippocrates himself had noticed this, as he has left it as a maxim in his writings, "That milk is to be given to consumptive patients," (*Aph.* 64. sect. 5.); providing, however, they be not very feverish, and have no head-ach, as I interpret it, from weakness of the stomach; and their hypochondres be not raised, that is, obstructed, or distended with flatus; and they do not labour under thirst; and if nothing else contra-indicate it. He likewise prohibits those patients from the use of it who labour under an acute fever, who pass bilious stools, or, on account of loss of blood, labour under the greatest degree of languor of all their functions, insomuch that there is reason to apprehend that it cannot be digested, but becomes corrupted.

79. Women's milk is universally supposed to be preferable to other kinds, because, on account of being thinner and less caseous, it is easily di-

gested by a weak person ; nor is it so apt to become acid, as, on account of the animal food which women use, it is in its nature in some measure equally prone to alkalescence. It is preferable, therefore, when an acid acrimony is either already present, or is apprehended, as in children and weak people. And as it seems to be thin, serous, and more allied to our fluids, it is more readily converted into animal and nutritious juice. It ought to be sucked from the very breasts, that nothing of the fine halitus may be lost. The woman, also, from whom the milk is taken, ought to be young and healthy, and ought to live upon salutary food, accommodated to the circumstances of the patient. After women's milk we recommend that of asses ; nor does Hoffman differ in opinion from us (*Differt. de Lac. Affinin.*), as he found it to be more salt, and to abound with a greater quantity of *essential oil* ; and therefore judged it to be well calculated to prove diluent, resolving, and cleansing. Next in order succeeds goats milk, and after it that of cows ; of which it has been discovered, that the former excels on account of its thinness and vulnerary efficacy, and the latter on account of its thickness and nutritious quality, from its containing more butyraceous and caseous matter. To these some add sheep's milk, on account of its being generally considered as being thicker, more caseous, and containing less butter. It is a more common opinion that horses milk approaches nearer to the nature of asses milk. That

kind, therefore, which seems to be best adapted to the indications and circumstances of the disease, ought to be chosen.

80. Most are of opinion, nay, prescribe, that the patient should commence with asses milk, proceeding next to goats, and, lastly, to cows milk. Nor ought it at the beginning to be given copiously, but the patient should proceed gradually, by making trial of it, to the necessary quantity. If, when taken in this manner, it be properly digested, if it do not become acid nor corrupted, nor excite nausea, vomiting, griping, or diarrhœa, nor aggravate the fever; we may allow the milk more liberally, and in repeated draughts, so that the patient may live upon it alone for some weeks. But in order that it may be more readily kept upon the stomach, the *primæ viæ* ought to be first gently purged, and the bowels ought to be afterwards kept open by frequent injections; nor must we omit those alkaline and absorbent remedies, which are considered as being safer, and less liable to oppress the stomach and intestines. For by means of them the cause of the acidity, if there be any present, is as far as possible prevented. Others endeavour to attain this end by means of a little soap, which has the additional advantage of very gently rousing the action of the bowels.

81. Some endeavour to render the milk more ferous by artificial means, or medicate it by particular additions. Hence some drink skimmed

milk, others that which is mixed with the water of *Nocera*; while others drink that which is mixed with vulnerary decoctions, or sugar, or honey. But the addition of lime-water is celebrated on two accounts; not only because by means of it the milk is prevented from becoming coagulated and acid, but also because it acquires a bland property of cleansing and drying the foul ulcers. But, above all, it is generally conjoined in the spring and summer season with mineral or acidulated waters, on which subject I refer to the frequent trials of almost all practitioners. Whoever wishes for ample information upon the properties of milk, especially in the cure of phthisis, and the method of employing it, may peruse a very learned dissertation published some years ago by Gallo, a physician of considerable reputation *. Moreover, the observations of Redi, Delpapi, Gyrilli, Beccaria, Hoffman, and others, concerning the use of milk, and the various modes of employing it, well deserve being consulted †.

* *Dissertazione del vero, e sicuro metodo dell' uso del latte, e suo abuso nella medicina di Giammichele Gallo.*

† Many authors have examined the intimate and medical powers of milk, among whom, to pass over the little work of Beccaria, and my own analysis of it, published an. 1772, a conspicuous rank is held by Young of England, and Wasserberg of Germany. The thesis of the former, published at Edinburgh an. 1763, may be found in the *Thesaurus dissertationum, programmatum aliorumque opusculorum selectissimorum*, &c. of Sandifort, vol. ii. art. xxiii. Rotterdam 1769. The chemical analysis of milk published by the latter is to be found in the second fasciculus of the *Opera minora medica et dissertationes*, published in the year 1775 at Vienna.

82. But although milk appears to be admirably adapted to phthifical patients, especially such as have fallen into consumption from hemoptysis, it must not be employed indiscriminately by all who labour under the complaint, nor at every period of the disease. For, in addition to the circumstances which, from the admonition of Hippocrates, I have already shewn ought to be taken into consideration (78.), it is likewise of great consequence to carefully inquire whether the ulcer of the lungs be conjoined with obstruction of the abdominal viscera, or with crude, stumous, or scirrhus tubercles, or has arisen from the supuration of them. For in that case the complaint may be aggravated by the caseous part of the milk, which abounds with gluten and mucilage. Sometimes, likewise, such is the quantity of pus contained in the ulcer, that it cannot be intirely thrown off by spitting, or it is so deep seated that it does not communicate at all with the bronchia. In both cases the blood, in consequence of the absorption of pus, becomes contaminated, colliquesces, and, when thus vitiated, very quickly corrupts the milk itself; in consequence of which some are of opinion that a new fomes is supplied to the complaint*. Generally the diarrhœa which follows or accompanies this colliquation increases immoderately, if it be already present, or, if it have not yet come on, is very quickly occasioned. Nor is it of any service, as some advise, to boil roses in the milk, or to mix

it with water prepared with ignited steel, or to add other astringents. For it seldom happens that by means of these remedies the corruption of the milk, and diarrhœa, by which the patient's strength is reduced, are sufficiently prevented. But if an acid or putrid colluvies in the *primæ viæ* cause the milk to become acid, the acidity is sometimes removed by cathartics, bitters, and absorbents, after which the milk turns out serviceable. Among the bitters the peruvian bark employed after gentle purgatives holds the chief rank. Delisle likewise admits of the cautious employment of an emetic †. It is then better to have recourse to a diet of oaten flour, to the cream of barley or rice, to the *serum lactis dulce* of Hoffman, decoctions of fine bread, and the like. In place of the milk likewise are substituted, the soup of frogs, of the tails of river-crabs, and of the flesh of snails, which if they do not remove the disease, at least render it milder.

* Raulin, *Obs. de med.* sect. iii. art. 3. & 4. Rozier de la Chafagne. l. c. p. 308. Delisle, l. c. P. iii. c. 3. p. 287. † *De la phthif. pulm.* P. iii. c. 1. p. 225.

83. Both in this case (82.), and in the scorbutic or scrofulous phthisis, as it is called, in which the fever is either altogether absent, or slight, or not continued, and a glutinous expectoration, like that of asthmatic people, is discharged, the cure, not only at the beginning, but when the disease is far advanced, is very much promoted by the balsamic pills of Morton *, which, on ac-

account of their inciding and resolving property, subdue and eradicate the proximate cause of the complaint †. But as their irritating quality may sometimes exasperate the cough, phlogosis, or fever, a different formula of them may be employed, calculated to the circumstances. It is my practice to compose them of gum-ammoniac, the powder of millepedes, and the concrete juice of ground-ivy, or scabiosa, omitting the other ingredients, which are too heating, and quicken the circulation too much. Sometimes I have employed Venice soap with the greatest advantage. Likewise the newly-expressed juices of the antiscorbutic plants, and gently-aperient decoctions of them, which are considered as being excellent pectorals, deserve being employed in this disease.

* The formula of the pills of Morton.---Rec. Pulv. milleped. pp. drach. iij. Gumm. ammon. optim. depurat. drach. j. semis. Flor. benz. scr. ij. vel. drach. j. Extr. croc. bals. peruv. an. scr. j. semis. Bals. sulph. terebinth. vel anis. q.s. M. f. pil. mediocr. deaur. † Morton, *Phthisiol.* l. 2. c. viii. p. 63. Geoffroy, *Mat. med.* vol. i. p. 100.

84. In the species of phthisis which seems to arise from atony and laxity of the lungs (54. 60.), the peruvian bark has frequently afforded the greatest relief. Loesek, in his own person, employed it with such success, that he no longer coughed up either pus or blood *. I myself have more than once observed a spitting of pus and blood, by which an attack of phthisis pulmonalis seemed to be pretty manifestly threatened, in per-

sons who had fallen into this complaint in consequence of labouring under hypochondriasis, and who had already begun to fall off gradually, successfully checked by means of an infusion of peruvian bark, sometimes without the addition of milk, and at other times along with it. But its wonderful efficacy appears much more certainly in those patients who, from their infancy, have laboured under scrofulous affections, whenever they are observed to have a disposition to phthisis pulmonalis. For Meade affirms that the complaint, when threatened, is to a certainty warded off by this blessed remedy †.

* See *Com. de reb. in scient. nat. et med. gest.* vol. v. p. 116. Geoffroy, l. c. vol. i. p. 282. † *Monit. et præc. med.* c. i. sect. x.

85. Nor is it a safe practice, in *confirmed consumption*, to employ emetics (Hipp. aph. 8. sect. 4.), or cathartics and acrid diuretics. For the strength, which is already almost completely reduced, is apt to be wholly overcome by them: but the body, which is universally falling off and becoming dry, is more and more exhausted of its fluids. On this account sudorifics, properly so called, ought to be suspected, and are deservedly rejected. I am aware that decoctions of the wood of guaiacum, sassafras, sarsaparilla-root, and the like, are recommended by many to resolve congestions, to purge the body of a serous or lymphatic colluvies, and to purify the blood; nay, even to cleanse and dry the ulcers of the lungs when they seem to proceed from a bad habit of bo-

dy and bad-conditioned fluids, that they have been employed with great hopes of benefit. But they agitate the fluids too much, dry the body more, increase the emaciation, and aggravate the fever in persons of a dry and warm temperament, and of a slender habit, or in those who are already much exhausted by the disease. If, therefore, they be admissible in any case, they are to be employed only at the beginning of phthisis, when the body is not reduced, and in fluid phlegmatic habits, rather with the view of preventing than curing the complaint.

86. Those, however, which act more mildly, and which are prepared from the root of bark, of rough bind-weed, mountain-reed, burdock-root, barley, veal, frogs, and the like, and are in some measure corrected by the addition of borage, sow-thistle, and succory, or mixed with milk, are not to be wholly rejected. For they correct, dissolve, and allay acrimonies, and expel them with all manner of safety by the kidneys or skin. In the ulcerous phthisis, or when its approach is apprehended, nothing is more usual, both among physicians and ignorant people, than prescribing and rashly employing balsamic remedies. But in Italy, here they are generally rejected by skilful practitioners, as proving injurious to the stomach, aggravating the fever, increasing the heat, and inflaming the lips of the ulcers. Nor do the prudent physicians of other countries disagree

with us *, from their having seen too frequent instances of the sad effects produced by the hasty and imprudent employment of such remedies.

* Geoffroy, *Mat. med.* vol. i. p. 444. Fothergill, *Com. de reb. in scien. nat. et med. gest.* vol. xviii. par. 3. p. 400.

87. But sometimes the ulcers of the lungs so abound with pus, and appear to be so foul, as to require being cleansed by these remedies. Not unfrequently also, so extensive is the diffusion of the purulent vitiation of the fluids, that it becomes necessary to oppose it by means of balsamics. f, therefore, their employment be admissible for these reasons, the safest and mildest only ought to be used; as the balsam of Tolu; the balsamic syrup of the London Pharmacopœia, or that of turpentine; Venice turpentine slightly boiled in water; and likewise the *aqua thecæ*, in Italy commonly called *goudron*, or *catrame*; which also, on account of possessing a very mild acid, opposes the putrid dissolution of the body. But I consider scarcely any thing as being better calculated for cleansing and healing up the ulcers, or for checking the corruption, than the long-continued and liberal employment of camphor given internally, from which the injury caused by balsamic remedies can hardly be apprehended.

88. I cannot here omit mentioning two remedies, to which I find a phthifical virtue, of I know not what kind, ascribed, namely, moss, or the *lichen islandicus*, and the English *elixir of vitriol*. But I have not yet been able to determine

with what justice they are celebrated. Let time, rather, and repeated experience, determine it. With regard to moss, Borrichi has already made some mention of its purgative quality *. But I know of no one who has spoken any thing of its antiphthifical virtue before Linnæus. For we learn from his dissertation *concerning the use of the mosses*, publicly defended in the year 1760, that the inhabitants of Sweden prepare a pottage, which is not of an unpleasant taste, with the lichen islandicus, which they use as a remedy against consumption †. They throw away the water of the first boiling, that it may not purge the belly. But ought we not rather to ascribe its good effect to the milk? In the next place, Scopulus mentions, and endeavours to confirm it by a number of instances, that not only swine, horses, and cows, are fattened by it within a short time, but also that when boiled with milk remarkable benefit has been produced by it in consumption, rickets, and cachexy (See *An. Sec. Histor. Natur.* Lips. an. 1769). He therefore ascribes to it a nutritious and strengthening property ‡. Schoenheyder, in consequence of repeated trials of it, has shewn, when inflammation and fever are not present, that it possesses a peculiar medical property in removing diseases of the chest ||. For by means of the *moscus islandicus* § he restored to health twelve children, who, in consequence of measles, had been attacked

with a purulent cough, accompanied with pain and oppression of the chest, and emaciation, while their appetite remained uninjured, after the oxymel of squills, kermes mineral, blisters applied to the breast, oily linaments, the theriac of Andromachus, and the peruvian bark, had been employed in vain. At first the pain was immediately diminished; in a week or two afterwards, all the symptoms were changed for the better, until within the space of five weeks they recovered intirely. Those in whom a diarrhoea was occasioned,—for I have already observed that the belly is relaxed by it,—were freed from this inconvenience by an emulsion of gum-arabic. It is to be observed, however, that such coughs, although attended with purulent expectoration, after a certain length of time which they go through, generally cease of their own accord, without the aid of medicine, or at least by common means; and this I wish to be noticed, that it may not be concluded from the observation adduced, that this remedy possesses more efficacy than in fact it does. It is an acrid and irritating remedy, and, on account of this property, appears both to purge the belly, and to act as a deobstruent and diuretic. Are its antiphtisical virtues to be ascribed to these properties?

* *Act. Haunien.* an. 1674. † *Linn. amant.* acad. vol. vii. n. 145.

‡ *An. 2. Hist. nat.* p. 107. || *Collect. soc. med. Haunien.* vol. i. p. 126.

§ The formula which he used was as follows:—*Rec. Musci island. unc. j. Decoq. in aq. commun. unc. xvj. ad remanent.*

unc. xij. Collat. adde fyr. scillit. unc. dimid. Detur unc. j. quovis trihorio. See Chap. i. Of Cough, par. 16.

89. The elixir of vitriol, De Haën observes, is extolled in England as a remedy in dyspnoea and suppuratory diseases of the lungs *. Its composition is contained in the London Pharmacopœia †, which exhibits a particular aromatic tincture in some measure corrected by the vitriolic acid. Hence the aromatic quality, which may be considered as suspicious, is counteracted by the vitriolic acid; and again, the vitriolic acid is sweetened by the aromatic spirit of the wine, so as not to be too abundant. Trials made by it in *purulent phthisis* were attended with such success, that Dr Pate, a learned physician of London, who at first would neither admit the remedy, nor credit the cures performed by it, at length convinced by experience, became a most strenuous advocate for it. But it is said that this remedy is most frequently employed in the phthisis which succeeds to long-continued fevers, attended with a foul tongue and loss of strength; and that its excellence has become known to the whole world, of late years, in the case of some hundred patients ‡. This remedy is given from twelve to twenty-five drops, once, twice, or thrice a-day, in such a quantity of water as scarcely leaves any acid taste. It is given to children in honey and water. In them we may proceed gradually from a small dose to forty drops daily. It is necessary to continue the use of the

medicine for two or three months or more, nay for years, if the disease do not intirely cease, being only alleviated. The English at the same time employ a decoction of bark with milk; and assert that no injury arises from it, as might be apprehended from the coagulation of the milk. De Haën mentions having employed this remedy in several patients advanced in life with such success as exceeded all expectation, and with a great diminution of the expectoration and cough, but that it proves most serviceable in that species of phthisis in which the inflammatory and suppuratory matter of the whole body is collected in the sound lungs (60.), and ejected in the form of expectoration, and that he frequently found that such a diathesis of the blood is powerfully corrected by this elixir ||.

* *Rat. med.* P. xii. c. vi. p. 239. † *Rec. Tinct. aromat.* M. lib. j. Spir. vitr. fort. olei dicti p. unc. iv. M. gradat. et postquam fæces subsederint, per chartam cola. The aromatic tincture is prepared in the following manner :---*Rec.* Cinamom. drach. vj. Semin. cardam. minor. decortic. drach. iij. Piper. longi, zingib. singul. drach. ij. Spir. vin. tenuioris M. lib. ij. Digere sine calore et cola. ‡ *De Haen, ibid.* p. 253. || *Id. ib.* p. 250.

90. Likewise the soap and flesh of vipers, prepared in a particular manner *, are not destitute of efficacy, whatever some physicians of celebrity, who have not experienced their medicinal powers, may think to the contrary †. For I look upon it that the authority and experience of Galen ‡, Aretæus ||, Antonius Musa §, Cœlius Aurelianus ¶, Meade **, Morgagni ††, De

Haën ††, and many others, is to be valued more than the idle objections of a few cavillers. Nor is the efficacy of vipers remarkable alone in incipient phthisis occasioned by a bad habit of body, but likewise in the confirmed consumption, and in the case of internal abscesses, as we learn from the clearest experiments, particularly of Morgagni ‖‖ and De Haën §§. For they possess an analeptic, nourishing, strengthening, and gently-diaphoretic property, by means of which both the strength, complexion, and nourishment, are restored to the system, and the faulty conditions and acrimonies of the blood removed.

* Galen employed either wine in which vipers had been steeped, or vipers themselves boiled in a pot in the manner of eels. Aretæus gave them boiled, and seasoned with salt and oil, by way of supper. They were likewise prescribed to be eaten,---probably boiled like fish,---for the healing of ulcers, by Antonio, a physician of Italy, who seems to have learnt the use of that remedy from Crator, whose pupil he probably was, as Meade imagines. In Italy, here we employ the powder and soup of them: but in powder they scarcely possess any efficacy. This, however, is not the case with the soup and flesh of them when newly killed. One half of a viper, or even a whole one, with chicken-flesh or veal, is boiled in a close vessel, in a sea-bath, with a proper quantity of water, and the soup made from it drunk off morning or evening, or both morning and evening, for a length of time. Others add frogs and the flesh of snails, or vegetables calculated for the disease; but even without the aid of these the efficacy of vipers is sufficiently manifested. Their flesh, again, is cut down and minced with crumbs of bread, delicate flesh, and the whites of eggs, and boiled up in this manner they are given to the patients by way of food. Morgagni, whom De Haën imitated, used to give the flesh of vipers that remained after the decoction, mixed with sugar of roses, over which he caused his patients to drink the soup which had been made from boiling them.

† See note * on par. 142. Vol. III. in which the author discusses the excellence of this remedy, and defends it against its opposers, and, among the rest, Tissot. † *De simp. med. facult.* l. ii. c. 1. || *De cur. morb. chron.* l. ii. c. 13. § *Plin. Hist. nat.* l. xxx. c. 13. ¶ *Morb. chron.* l. iv. c. 1. ** *De ven. tentam.* 1. †† *Epist. anat. med.* lv. n. 14. et seq. ‡‡ *Rat. med.* P. xiii. c. vii. p. 227. et seq. |||| L. c. §§ L. c.

91. Lastly, although the primary disease appears to be incurable, our attention must be turned to the alleviation of the symptoms. The distressing cough rendering the nights sleepless, requires opium, and remedies containing it. For by means of them its force is broken, and it is allayed for some hours. By means of opium also, immoderate evacuations of every kind are checked and stopped. The violence of the cough is likewise allayed and restrained by the syrup of white poppy, by emulsions of the cold seeds, by the fresh prepared *pulvis Haly Abbatis* *, and other remedies already pointed out (10. to 15.). The diarrhoea is allayed by absorbent and strengthening remedies; but the diascordium Fracastorii, and the theriaca Andromachi, hold the chief rank, on account of containing opium. The sweats, especially when they proceed from laxity of the solids, or are kept up by it, which very frequently happens, are in some measure checked by the decoction of peruvian bark, or that of the leaves of sage drunk off cold. Nor is it improper to drop into it a few drops of the spirit of sweet vitriol, or of the elixir of vitriol, particularly if there be any reason to suspect that a putrid colliquation is pre-

sent. It has been ascertained by experience, that such colliquative sweats are to a certainty checked by lime-water, provided it be given mixed with a little new milk, to the extent of a pint daily †. The purulent expectoration likewise, when it is not easily discharged, or, on account of being suppressed, overloads the lungs by its excess, is to be called forth by means of expectorant remedies. The means which are properly calculated for this purpose have been already repeatedly pointed out. I likewise lately recommended the stalk of the *Adulcamara* boiled in water ‡, by means of which I have frequently observed a great quantity of pus discharged from the lungs. Likewise when the lungs are ulcerated, they are said to heal them. The instance of Werlhof, already mentioned (77.), who, when labouring under an ulcer of the lungs, recovered from the employment of this remedy, as Clerc mentions, favours our opinion. Sometimes a fixed pain in some part of the chest proves exceedingly distressing to consumptive patients; for removing and allaying which Pringle || and Lieutaud § mention, that nothing is more efficacious than a seton inserted in the part affected. This pain generally proceeds from the lungs being eaten through, and from the pus corroding the pleura and intercostal muscles. It is not surprising, therefore, that the pain should disappear upon a passage being opened for the pus by the seton. Sometimes without, in fact, disappearing, it appears to be as it were obli-

terated by the greater pain excited on the surface, because the more intense degree of the latter renders that of the other scarcely perceptible ¶.

* See its description in the *Antidotarium Bononiense*.

† The *formula* in which the dulcamara is usually prescribed are as follow :---Solani scandentis five slipitum dulcamaræ in frustula sectorum unc. dimid. Duoque in lib. tribus aq. font. ad lib. j. remanentiam. Colaturæ adde sacchari parum ad gratum saporem. Dentur sing. hor. duo cochlear. : from Clerc. Or, from the same author, another :---Rec. Stip. dulcam. sciss. et leviter contus. drach. ij. Infunde in s. q. aq. ferventis per horam dimid. ; deinde momento ebulliant. Colaturæ lib. j. et semis adde oxym. simpl. syr. flor. papav. rhæados an. unc. j. misce. Dentur omni bihorio unc. ij. vel iij.

‡ Pringle, *Diseases of the army*. ¶ L. c. § *Synops. univers. prax. med.* l. i. sect. 3. p. 165. edit. Venet. See also Brindellii *disfert. De phthif. et h. æ. discrim. et setaceorum utrobique usu*. Gotting. 1754. and *Le roy sur l'écorce de Garou*. p. 123.

¶ I shall beg leave to transcribe a history from the Italian Journal of a celebrated writer, to shew that in phthisis pulmonalis both lime-water, as well as balsamics and setons, and other powerful remedies, if they be not employed sparingly and cautiously, sometimes prove more detrimental than serviceable, and that nature in it delights more in a simple than a complicated method of treatment. I have faithfully translated the passage from the author's own manuscript. " In the month of May of the present year, I was called to Esther Cassia, a young woman of twenty-two years of age, then confined to bed with an ulcerous phthisis pulmonalis, attended with a troublesome cough, purulent expectoration, a symptomatic hectic fever, and extreme emaciation. About a year previous to this period, her menses, which were then flowing, had suddenly stopped in consequence of terror, nor did they afterwards return. Such was the origin of her complaint. Shortly afterwards she was attacked with a dry cough, which for two months she continued to disregard, as being altogether a catarrhal one. But on fever supervening, attended with great difficulty, both of breathing and of lying down, she was several times bled by the advice of a physician, and other means were employed without any advantage. A vein was opened

ten times ; blisters were four times applied, and a fifth time between the shoulder-blades ; a seton was inserted under the axilla ; then the balsamic pills of Morton, and the strongest lime-water, taken every day to the extent of thirty ounces, which almost induced the patient's death ; and other remedies of this description were employed. For a great length of time the poor girl was put to the greatest distress to no purpose. On which account those violent remedies being dismissed, she was put upon a milk diet alone. In consequence of it all the symptoms abated. The cough was relieved ; the expectoration rendered easier ; the matter expectorated became more sparing, less fetid, and of a better disposition ; the breathing became freer ; she could lie on either side without inconvenience ; and the fever also abated. From which, if I mistake not, we may infer the superior excellence of this simple method of treatment, which is doubtless to be preferred to that which is more complicated, especially in this taint of the lungs. Being asked my advice, I recommended particularly the pure warm air of the country, although it hardly appeared that any cure was to be expected from medicine. But as the disease did not yet seem to have attained its acme, or third degree, as it is called (for there were no nocturnal sweats, no diarrhoea, nor any oily urine), her recovery was not to be altogether despaired of. I have related this history to shew that too violent and active remedies are employed likewise among our countrymen, after the manner of the Germans, either because some of them have been educated in the Transalpine schools, or because they wish servilely and rashly to imitate the Transalpine physicians." So far the author goes. But I would not have any one suppose that the Transalpine physicians were ever despised by him ; nay, as he was well acquainted with the learning and medical skill of many of them, he held them in great estimation, and contended that they justly deserved being universally esteemed. All that he required of some of the modern practitioners was, that they would not employ in the cure of diseases too many or too violent medicines, thus swerving widely from the practice of the ancients, and that they would not rely too much upon such uncertain and fallacious remedies ; into which error he complained that several of the French practitioners, as well as the Germans, and several of the Italians also, following their footsteps, occasionally fell, to the disadvantage of the art, as well as to the detriment of their patients. See his excellent observations in his notes upon par. 50. of Vol. I. concerning sc-

vers, and the remarks he has all along delivered upon this subject. *Germ. Editor.*

92. So far concerning the cure of primary phthisis. In the secondary and symptomatic species, however (55.), our whole care ought to be directed to the disease from which it first proceeded, or on the continuance of which it still depends. For unless it be removed, it will be impossible to overcome by any means, however efficacious, the disease which is dependent upon it. The cure must therefore be opposed to the primary complaint, of whatever kind it be. If, for example, consumption originate from scurvy, or from an hypochondriacal affection, those remedies must be employed which are calculated to previously remove these diseases. Thus, if the complaint proceed from a scabious, herpatic, or other taint of that kind, the juice of tarraxacum, fumitory, succory, lapathum, sorrel, or decoctions of these plants; whey; baths, both of fresh water, and of sulphureous and medicated water, and other remedies of this class, promise relief. But that which is found to be attended with the greatest advantage, is the crude antimony reduced to a very fine powder. For it corrects the peculiar acrimony, attenuates the thick humours, expels those which are vitiated by increasing perspiration, and predisposes the body to become fat. Antivenereal remedies must be opposed to that which proceeds from the venereal disease. To remove a consumption of

this kind, attended with ulcers of the fauces, night-pains, emaciation, slow fever, cough and spitting of blood, by means of sublimated mercury employed after the method of Van Swieten *, and continued for two months; but during the whole of that time, he likewise gave internally an infusion of bark and sarsaparilla, and soup made with delicate flesh, and prepared with the cup-moss; and besides these, milk in place of any other aliment. In the mean time he caused the ulcers to be cleansed by means of a watery solution of the same corrosive sublimate, with the addition of a proper quantity of honey †. Christianopulus also performed a similar cure by the use of the corrosive sublimate, and has published the case in the little work concerning the diseases cured by the medicine of Van Swieten. Moreover, Bourru ‡ does not hesitate to assert, that the *gummy mercury* of Plenck || is employed with advantage in the cure of this consumption. Others prefer the sparing and cautious rubbing in of mercury. But when the lungs are already eaten through by an ulcer, they hardly bear the employment of mercury in any manner without injury. It is a safer and better plan to have recourse to the decoctions of the woods, by means of which I have not unfrequently observed *phthisis pulmonalis* removed, and the hectic fever dissipated. Of these the chief rank is held by the decoction of Septali §. With regard to the remaining species of consumption, originating from

morbid states of the other viscera (53.), as they require nearly the same treatment which is calculated for *phthisis pulmonalis*, what has been said of it consequently applies to them also.

* *Van Swieten's method*, as he himself, in two different letters, imparted it to Jos. Bemuenutus, a physician of Luca, an. 1755, is as follows: "I set great value upon the use of mercury, but its administration requires great caution, especially when it is employed in its crude state, or rubbed in. I know that these trials have not turned out successfully in the hands of every one. If the *corrective sublimatum* of mercury be dissolved in rectified spirits distilled from corn, in the proportion of a grain to the ounce of spirit, and if of this mixture a spoonful, or at most two spoonfuls, be given to adults morning and evening, drunk off at the same time in a large quantity of barley-water, or any other emollient drink, its efficacy is found to be very great in the case of lues venerea, and in other diseases of great difficulty of cure. The remedy is continued so long as any of the symptoms of the complaint remain. It is taken safely even for a length of time. I advise the patient to abstain from fatty matters, from salted or smoked meat, and especially from bacon: I readily allow them broths, soft pot-herbs, and a small quantity of flesh. I give them in abundance a ptisan of barley, with a fourth part of milk, or any emollient decoction." In place of the spirit distilled from corn I substitute diluted spirits of wine, and then sweeten the solution with the syrup of violets.---*From a paper of the author's.*

+ *Collect. Sec. Med. Haun.* vol. i. p. 171. † *Descript. Hist. quorund. morb. hist.* 12. Vid. Mich. Frid. Boehm. *Dissert. varia Syphilidis therapia.* Argentorat. 1781. § xxi.

|| The *pilule mercuriales gummosæ* of Plenck are as follow:---Rec. mercur. vivi drach. i. gum. arab. drach. ij. Terantur invicem, addito dimid. cochleari aquæ in mucum. Huic bene subacto add. extract. cicutæ drach. i. pulv. liq. q. s. m. f. pil. g. ij. Dentur ii. sex pro dos. mane et vespere. See *Nova et facilis methodus argentum vivum ægris venerea labe infectis exhibendi quam Vindobonæ*, ann. 1776, edidit J. S. Jac. Plenck.---*From the author's papers.*

§ Decoctum Septalii:---Rec. Rad. Sarsaparillæ minut. incis. unc. xj. hordei excortic. unc. iv. In fund. per hor. xxiv. in aq. calent. lib.

xv. vase clauso. Deinde lento igne decoq. donec quinque lib. consumptæ sint. Tunc extrahatur sarsaparilla et tundatur in mortar. marmor. mox in eandem aquam immitatur, et add. carnis vitulinæ, macr. lib. iij. sem. coriand. unc. j. vel ligni sancti ras. tantundem, vel santal. citr. drach. iij. et operto vase iterum decoq. lento igne, donec remaneant lib. v. et in fine aromatisentur drach. tribus cinnam. electi. Colentur cum forti expressione. Dentur summo mane unc. vj. vel vij. quatuor horis ante cibum, vesperi autem unc. iv. vel v. ante cœnam. Assumatur per quam plurimos dies, quandoque usque ad centum. Lud. Septal. *animadv. med.* l. vii. n. 214. *From the Author's papers.*

93. Lastly, the ulcers of the larynx and trachea, or phthisis trachealis (57.), when it arises from an acrid humour falling into the larynx, which very frequently happens, require that the defluxion from the mouth of the larynx should be prevented, and the acrid humour corrected, in order that the ulcers may the more readily heal up. Morgagni * caused a patient labouring under this complaint to remain as silent as possible; to lie with his head low; to live in a large but warm chamber,—for it was the winter-time;—to avoid the wind and sun, as Hippocrates recommends †; to suck milk every morning from the breasts of a healthy woman, living on the best food; and to take, by way of supper, pottage of the *ferculum Saxonix*, boiled in milk without sugar, and by these means restored him to health, contrary to all expectation. He likewise removed another phthisis trachealis, which was approaching to a phthisis pulmonalis, as it appeared to have been occasioned and kept up by

an herpetic and scorbutic acrimony, in the following manner. He gave every day a little of the resin of turpentine, by which the patient affirmed that the throat and chest were considerably relieved. After that, for the first twenty days,—for it was the summer-season,—he caused the patient to drink milk-water, as it is called, in which aquatic pimpernel, ground-ivy, sun-flowers, and a little of the bark of saffrafras had been macerated, the drinking of which was always repeated five hours after dinner. But, after these twenty days, in place of it he substituted the drinking of viper-soup, prepared with frogs and the tails of river-crabs, to be drunk in the morning. After the patient had begun to use this, itchy spots broke out, the colour of the face was improved, the strength increased, the patient became less lean, the cough less frequent, the hoarseness slighter, and the expectoration more scanty. The food consisted entirely of chickens, which were boiled, stuffed with the above-mentioned herbs, and of frumenty prepared from rice or oats, with almonds. The drink at table was always water very slightly medicated with the root of bark and the bark of saffrafras; and that at other times the *aqua Brandulæ*, which, during the heat of summer, and when the thirst was urgent, was drunk somewhat more liberally. As towards the beginning of September the cough, expectoration, and emaciation still continued to go on,—for after employing so many remedies he appeared to be thinner than he

ought to have been,—the matter expectorated, especially that spit up in the morning, although not as formerly bloody and putrid, still had not lost its yellowish ash-colour and saltish taste. Lastly, the cough was still troublesome in the morning and evening, and seemed to arise from a deeper seat than the larynx. On which account, the patient being again and again cautioned to defend himself against the inclemency of the cold weather, he had advised him to drink for a month asses milk, in consequence of which the expectoration returned almost to its natural condition; then to drink cows milk, in the use of which he persevered to the end of December. By which means the spitting, cough, and all the symptoms were made to disappear, and the former vigour, colour, and habit of body, together with perfect health, were restored †. But every phthisis trachealis and ulcer of this kind does not so readily yield to medicine. They generally terminate in real phthisis pulmonalis and death, or cut off the patient by suffocation.

* *Epist. anat. med.* xxii. n. 27. † *De morb.* l. 2. ‡ *Morgagn Epist.* n. 31.

94. Lastly, I must say something concerning the regimen to be adopted. The labour of the physician will be intirely frustrated, unless the causes which have given origin to the complaint, or excited it, be removed with the utmost care, and proper attention be paid to the regulation of the

non-naturals. In particular, the food ought to be weak, cooling, and easy of digestion. Fresh and tender pot-herbs, ripe fruits, and such as are not apt to become putrid, soft boiled eggs, and small fresh-water fish boiled in milk, and given sparingly and cautiously, are preferable to flesh. If the patient be allowed any animal food, it ought to be that of chickens which have been fattened with barley, rice, or Turkish corn boiled in milk. But every kind of fulness is to be avoided. Thick, glutinous, too nourishing articles, or taken in too great quantity, and fat soups; gelatinous things; farinaceous pottage, and the like, which are generally given by way of food by the common people, who have scarcely heard of the name of phthisis pulmonalis, are deservedly condemned by Van Swieten *. For in the languid state of the stomach they cannot be well digested, and they afford a viscid, sluggish, glutinous kind of chyle, which, on being received into the blood, obstructs and oppresses more and more the lungs themselves, already obstructed, or labouring under atony. I do not deny, however, that sometimes the *ferculum Saxonix*, and pottage made of the flour of mace, or Saracenic corn, called by botanists *sagopyrum*, or even of wheat or rye †, from which pottage is prepared with water or milk, have proved of remarkable service in some cases of phthisis; provided the experiments which are related be understood only of incipient phthisis,

and of that which arises from excessive tenuity and acrimony of the fluids.

* *Comment.* on Boerhaave, § 1200. n. 3. & § 1208. n. 3.

† In Brunswick a pottage is prepared with the flour of rye, pure water, and fresh butter, boiled together, which either alone, or in conjunction with milk, is taken in the morning upon an empty stomach, and by means of it Lange mentions, that consumptive patients, if they be not restored to health, are frequently relieved. *Miscel. verit.* fasc. i. p. 33.

95. The expressed juice of barley, oats, or rice, not much condensed, is more easily digested; nor does it afford a gluten which cannot be overcome by the *vis vitæ*. Likewise the flour of barley, slightly toasted, loses much of the gluten by which it might prove injurious to the stomach and other viscera. Gruel made of it, and boiled up in soup or milk, lies on the stomach well, and proves nourishing. Others employ, in place of that flour, bread crumbled down fine, and boiled in milk, with the addition of a little sugar and wheaten flour, so as to afford a soft, pleasant, and light food. At present the kind of food held in the highest estimation, especially in Germany, is *sago*. It is brought to us from the East Indies, and is said to be the medulla of a particular sort of palm-tree formed into grains. In the year 1645 Mallovin published an express dissertation at Paris concerning *sago*, as being the best remedy in the cure of consumption. In it Lange * has ascertained the presence of smooth particles, and asserts that the utility of these ap-

pears in alleviating diseases of the lungs, and is evinced by frequent experience. Moreover, he observes that sago is very easy of digestion, and therefore affords good and generous nourishment, and is almost altogether converted into juice and blood. He recommends boiling it in two parts of water and one of milk, into the form of pottage, and affirms that no obstruction of the glands or viscera is to be apprehended from its employment.

* *Miscel. veritat. fasc. i. p. 109.*

96. To these ought to be added another kind of pottage, named by Clerc the *cibus albus**, which he highly recommends. He boasts † that a lady of quality, who in consequence of a hæmoptysis had fallen into a confirmed consumption, being disgusted with the milk on which she had been living, merely by employing this pottage between three and four months,—in consequence of which itchy pustules broke out all over her body,—was at length restored to health ‡. But it would be tedious to particularise every thing which is recommended by authors by way of food or medicine, and which may be occasionally taken by patients with success. Therefore, passing over these, I shall proceed to the remaining regulations concerning the diet. While they continue to employ milk, wine must be forbid. Their supper ought to be very light. They ought to go to bed early. They ought to avoid too much sleep, as well as too long watching; to take

moderate exercise, and to abstain intirely from venery. A prudent choice of air and exercise must be made. For the climate in which the disease has arisen is the worst. The most temperate air should be chosen, and, if possible, that of the plains, which is preferable, because plants are said to have a surprising effect in purifying putrid air. Neither does the same degree of motion and exercise answer every patient; nor must riding on horseback, or in a carriage, as is commonly done, be prescribed upon every occasion, but only in the case of patients who labour under atony of the solids, and whose fluids abound with a crude and sluggish mucus, before the complaint has become confirmed ||. A sea-voyage is calculated for most patients, or for those whose strength is considerably exhausted. Cicero himself §, to prevent the approach of consumption, to which he was naturally predisposed, had recourse to a long voyage. And the advice of the younger Pliny to his freedman, who laboured under hæmoptysis, to take a voyage to Egypt, was attended with success. But why need I recur to ancient authorities, while we have such repeated instances of the success of this remedy among ourselves? I shall simply add, that patients are ordered to go to the climates where the winter-season is mildest, as those of Naples and Pisa are, in order to spend their winter.

* Clerc, *Hist. nat. de Phom.* vol. ii. p. 33. † Raulin also has made the same remark (82.) ‡ *De clar. orat.*

|| Take the white flesh of a capon, or of a roasted fowl, without the skin or fat, half an ounce of purified sweet almonds, four bitter almonds, six drachms of seeds of white poppy, pound all together in a marble mortar until it be reduced to a paste, which must be occasionally wet with two pints of new milk gradually poured upon it. Afterwards inclosing them in a piece of linen, let them be expressed, that an emulsion may be obtained, in which dissolve half an ounce, or six drachms, of the flour of rice. Let this mixture be placed upon a slow fire, always stirring it about, that it may not burn, until it acquire the appearance of cream. Add as much of the sugar of roses, or violets, as pleases the patient's taste. Then removing the vessel from the fire, the water of orange-flowers, or of a whole citron, or other aromatic, may be added to it. Of this mess the patient may take a proper quantity three or four times a-day. § See the *Phthisilogia* of Morton; *Theatr. Tab.* of Bennet; Raulin's *Obs. de med.*; Dupre' de Lisse, *De la phthis. pulmon.* &c.

CHAPTER IV.

CONCERNING INFLAMMATION OF THE LUNGS AND CHEST, AND KINDRED, OR SUCCEED- ING, AFFECTIONS.

97. INFLAMMATION of the lungs is twofold; namely, *peripneumony** and *pleurisy*. These affections, in my opinion, differ neither in their seat nor nature, but merely with regard to their symptoms. This appears to be chiefly proved by anatomy, reasoning, and the authority of the most distinguished writers. Nor am I disposed to give up my opinion in consequence of the arguments which I know others allege against it, or by the passages adduced from the spurious works of Hippocrates, by authors otherwise of the greatest learning; as the same author, in his

genuine book, *De Locis in Homine* (N. 24.), has left it in writing, when both parts of the lungs are inflamed, that peripneumony takes place; but if only one part of them be inflamed, that pleurify arises.

* *Peripneumonia peripleumonia, pneumoniæ, pulmonia*, &c. are synonymous terms.

98. Peripneumony, according to the original sense of the word, implies an inflammation surrounding the lungs. But if it be taken in a looser sense, which is commonly done now, it comprehends that inflammation of the lungs which is not attended with an acute and pungent pain; or if any pain be present, it is rather of a dull and heavy kind. Its principal symptoms are the following: Quick, warm breathing; a cough, at first dry, with a scanty and frothy expectoration; thin, crude, yellow, or streaked with blood, afterwards moist, attended with a more copious and freer expectoration of a thicker and better digested matter; a sense of weight, heaviness, and distension of the præcordia and whole chest; no pain, or such an one as has been just now described, and generally settling in the sternum and spine, or only betraying itself when the cough shakes the chest with uncommon violence. Moreover, the cheeks swell and become red; they are occasionally affected with glowing heat; the veins of the temples and neck become turgid; the eyes protuberant; the head is affected with pain; the tongue becomes parched, and is first tinged with

a kind of yellow colour, and afterwards overspread with a viscid mucus; and, lastly, it becomes black, and sometimes it cracks. To these symptoms are added loathing of food, and a desire for cold drink and cold air; the pulse for the most part is great, sometimes wavy and soft, frequently, however, hard and violent, (notwithstanding of the hypothetical opinion of others); sometimes it is of the kind called *dicrotus*, or intermitting, or small and quick; the patient's lying upon his back with greater ease, while he is scarcely able to lie on either side, on account of the danger of suffocation; loss of strength; the urine sometimes thin and watery, sometimes red and thick.

99. If the complaint be more severe, or become worse, the breath is drawn with the utmost difficulty; the patient is distressed with constant watching, or a comatose sleep, although of very short continuance, steals upon him; the mind is affected; a very bloody and florid expectoration is coughed up, which is at length suddenly suppressed, and occasions a bubbling noise internally; the extremities are cold; the lips and nails become livid; the forehead and neck are bedewed with a cold sweat; there is a tendency to fainting; the eyes are languid, watery, and covered as it were with a film; the nostrils become dry, and the angles of the nose stretched wide; the pulse becomes obscure, vermicular, and for-

micating; and other deplorable symptoms close the train.

100. In pleurisy symptoms nearly similar to these occur. For even from the days of Galen*, that complaint was supposed to be attended with a continued acute fever; difficult respiration; a troublesome cough; a crude, sometimes bloody, expectoration, or streaked with blood; a hard or *serrated* pulse, and not a deep or dull pain, as in peripneumony, but a more acute or frequently pungent one in some part of the chest, or in one or other side, so much aggravated by every inspiration and shock occasioned by the cough, that the patients are obliged, on account of the pain, to check their inspiration and the cough. The pain sometimes precedes the fever, sometimes succeeds it, according as the pleurisy is primary or secondary. Hence the symptoms peculiar to pleurisy, by which, if it cannot be defined, it may at least be described, are thus enumerated by Cullen: *Pyrexia; dolor lateris pungens; inspiratio dolens; decubitus, plerumque in latus affectum, molestus; tussis dolentissima, initio sicca, postea humida, sæpe cruenta* †. A more violent pain, therefore, which is always present, constitutes the difference, if there be any, between peripneumony and pleurisy.

* Riverius, *Prax. med.* lib. vii. cap. 3.

† *Gen. morb.* ord. ii.

phlegm. gen. 12.

101. Pleurisy has generally been considered as an inflammation of the side or pleura surrounding

the ribs, in order that it might be properly distinguished from peripneumony, which was supposed to arise from inflammation of the lungs. Others, however, on discovering from dissection that they are both diseases of the lungs *, inquiring into the cause of the one being attended either with no pain, or only an obscure one, while, in the other, a most distressing one is present, thought that they had discovered that it proceeds from the difference of the part affected. For they supposed † that pleurisy was seated in the external surface of the lungs, which they imagined to be more sensible from being covered with the pleura; while they believed that peripneumony was contained in the internal recesses of the lungs, which they imagined to possess less sensibility on account of the want of the pleura there. But neither can the pleura be the seat of so great pain, as it has few or no nerves, nor are the lungs therefore more sensible in consequence of the pleura, nor are the internal parts, which are very copiously provided with nerves, less acutely sensible. As therefore the distinction between peripneumony and pleurisy consists intirely in a greater degree of violence of the pain; I consider it, with Sarcone, as being very probable, that in the former most of the less sensible parts of the lungs are affected, and more slowly, with the cause of the inflammation, but that in the latter, some of the parts which are endowed with more exquisite sensibility, and provided with more remarkable nerves, such as the inter-

nal parts, are affected ; or that the nerves themselves are more immediately and violently touched and vellicated by the inflammatory acrimony. What occasion, therefore, is there for conceiving, as some suppose, that in pleurisy the bronchial artery is more affected by the inflammation, and in peripneumony the pulmonary artery? Are the distributions of these arteries so distinct, that they proceed in their course separately, no where communicating, or being mutually joined?

* Vid. Zecch. l. ii. *De corp. hum. struct. et Append. consult. med.* xxvi. Lindestolp. *De venen.* p. 314. among whom is Morgagni, together with most of the moderns.

† The most incontestible proofs, by which it is demonstrated that the lungs are the seat of pleurisy, may be read in the works of Tissot, in a letter to Hirtzel, p. 28. et seq.

102. I do not, however, deny that the pleura sometimes becomes red and inflamed all over, which may be proven by innumerable dissections; but I merely contend that, on account of its possessing none, or very little, sensibility, it is altogether incapable of exciting so severe a pain as generally takes place in pleurisy (98.); and that it can neither occasion such difficulty of breathing, nor such a cough and copious and bloody spitting, unless the lungs, or nerves distributed over the posterior cellular spaces, or the intercostal muscles, be at the same time affected. For it is known, from repeated observations, that when the pleura alone is inflamed, neither is the pain so acute, nor is it aggravated on inspiration, because by inspiration it is rather relaxed; nor is so frequent

and troublesome a cough excited, nay, that it is frequently absent *. Dissections have even been made by eminent anatomists, from which it has appeared that inflammation of the pleura has taken place without the patient's having complained of any pain †. Many, both of the ancients and moderns, affirm, that this inflammation of the pleura is properly the *true pleurisy*, on account of its existing in the pleura, from which they think it receives its name. They acknowledge that it is a disease of very rare occurrence, and that it does not appear surprising that, on dissection, the pleura is rarely found to be inflamed in pleurisy. But do all the symptoms characteristic of pleurisy (98.) occur in this pleurisy? Are the pain and difficulty of breathing so great, is the cough so distressing, or the spitting of blood so copious, that it may be called *actual pleurisy*, such as is described by authors (100.)?

* Zerian. *Della parapleuritide*, c. iii. p. 30. 31.
 Medicus, *Collect. obs. med.* vol. i.

† Frid.

103. Sometimes the mediastinum by itself becomes inflamed, and a disease similar to pleurisy arises. When this happens, most authors affirm that a pain, together with the other symptoms of pleurisy (98.), attacks nearly the middle and forepart of the chest,—if the anterior part of the mediastinum, by which it is connected to the sternum, be inflamed,—and the posterior part,—if the backpart of the chest, next to the spine, be affected,—or both parts, if the inflammation occur in the

corresponding parts of the mediastinum. But Petrus Salius Diverfus*, who has inquired very attentively into the symptoms of this disease, remarks that during the inspiration a straitening and kind of obstruction at the sternum is felt, rather than pain,—which indeed is consistent with the small degree of sensibility of the mediastinum,—and when in fact the pain is present, that it is neither remarkable nor violent; but that the respiration is very quick, although not difficult or laborious. Moreover, he asserts that he has seen such patients affected with an acute fever, accompanied with great restlessness and thirst, and the other symptoms which are the concomitants of ardent fevers; that they complain of great heat in the thorax, in consequence of which they were both desirous to inspire the cold air, and expire their warm breath; that they were all distressed with a cough, generally dry at the beginning, and afterwards moist; that what they expectorated was either of a red or yellow colour; that the greatest part was of a yellow colour, and little of a red; and that their pulse was like that of pleuritic patients. And he has illustrated the matter by the instance of a particular patient, an account of whose dissection he adduces; adding, that syncope concurred with the other symptoms when the inflammation of the mediastinum was diffused to the pericardium. The pericardium also, nay, even the heart, sometimes becomes inflamed by itself. When this happens, besides the pain and

anxiety, the patient is subject to frequent fainting-fits, and great heats; very acute fever; great thirst, nay, even more ardent than in pleurisy and in peripneumony †. The pulse is violent, very quick, and sometimes intermitting ‡. Nor is it a rare occurrence for the inflammation of the lungs, on account of the vicinity or connection of the parts, to be propagated to the pleura, diaphragm, mediastinum, pericardium, and heart; or, on the contrary, to pass from these to the lungs, according to the nature of the parts affected, occasioning excruciating pain, constant and violent cough, orthopnoea, delirium, convulsions, derangement of the pulse, and the greatest anxiety. When the complaint affects so many parts together, it is named by some *pleuro-peripneumonia* ||; the term being employed in a more extensive sense than in its usual acceptation (112.).

* *De affect. part. c. vi.* † *Ibid.* ‡ Riolan. *Enchirid. anat. med.* l. iii. p. 206. || Haller, *Opusc. pathol.* obs. 13. Morgagn. *De sed. et caus. morb. epist. anat. med.* xx. & xxi. De Haen, *Rat. med.*

104. But although pleurisy has many symptoms in common with peripneumony, in it, as I have already observed, an acute and lancinating pain is felt, particularly if the left side be affected, which sometimes rises upwards to the throat, sometimes to the clavicle, sometimes to the shoulder-blade, sometimes descends downwards to the præcordia or hypochondria, and sometimes is fixed in both sides. At times it is felt only

when the patient, while lying on the right or left side, is desired to make a full inspiration, or to cough. For as inspiring and coughing increase it when present, they excite and call it forth when latent. When this happens, the pleurisy is named *occult*. According to Hippocrates, the cause why the pain is perceived in various places, or propagated thither, is explained in the *Coacæ Prænotiones*, as follows: "When a pain is felt at one clavicle, one of the upper lobes of the lungs is affected; but when it extends to both, both superior lobes are in like manner affected: when the pain is felt in the middle of the rib, the middle of the lungs is diseased: when the pain passes to any part of the lungs, the lower lobe is affected: when one whole lobe is injured, all the parts corresponding with it become affected." (N. 400. and elsewhere).

105. When the accession of the fever takes place, which is frequently preceded by shivering and cold, and succeeded by heat and thirst, the patient is sometimes distressed with vomiting, or a desire to vomit, and the urine is first voided thin and copious, although it afterwards becomes scanty and red. The respiration is frequent and small, nay, difficult, but not always so, as in peripneumony. It is likewise generally inconvenient to lie upon the sound side; for the inspiration is then rendered more difficult, the cough and anxiety increase, and the pain also frequently re-

turns, which is easily explained. For the lungs being inflamed, become swelled and distended, and, on account of the congestion, are rendered more solid and heavy. If the patient lie upon the sound side, the mediastinum pressing upon the lungs straitens and irritates them in such a manner, that they become less capable of serving the office of respiration. Hence the blood passes through them with greater difficulty, in consequence of which the cough and anxiety are increased. But when the pain at the same time is increased in this posture, it probably happens in consequence of some adhesion of the lungs to the pleura; for while the patient reclines upon the sound side, the lungs, where they adhere to the pleura, being torn by their own weight, must necessarily become more painful, and the more so, if the pleura and intercostal muscles, with which they have become united, be at the same time in a state of inflammation. The pulse, as I have already remarked, for the most part is hard and serrated; sometimes great and violent; sometimes small and irregular; at other times, likewise, soft, wavering, and having the double stroke.

106. At the beginning of the complaint, either nothing, or only thin phlegm, or some thick tenacious matter, is expectorated, although it is for the most part streaked with blood. As the disease advances, the expectoration comes off more easily and copiously, and, from being thin, begins

to become thicker, and changes its bloody for a whiter colour. At the height of the complaint, which is named *status*, it is concocted, white, smooth, and affords relief. When the complaint takes a turn, the pain, fever, cough, and difficulty of breathing disappear, symptoms of concoction being discoverable in all the excretions. If, however, notwithstanding the efforts of nature, and the remedies employed, the inflammation increase and spread wider over the lungs; or if it be translated from the pleura and side of the thorax, where it was first seated, to the lungs, the pleurisy is then said to pass into peripneumony. For, in consequence of the lungs being oppressed with the inflammatory gluten, for the most part not only does the pain, in consequence of the sensibility being overwhelmed and blunted, remit, and the respiration become short, high, and can only be performed in the erect posture, while the chest is oppressed, and a bubbling noise is emitted from it; but likewise the blood being forced to stagnate in the right ventricle and auricle of the heart, as well as in the trunk of the vena cava, opposes an obstacle to that which is flowing back from every part of the chest. Being forced by the action of the heart into the pulmonary vessels, which are thus oppressed, it distends them, expresses the mucous gluten from the lateral vessels, obstructing and filling all the parts; in consequence of which the air vesicles being compressed,

can neither be dilated, nor promote the circulation through the lungs. Hence, the circulation of the blood being interrupted, suffocation and death follow, before suppuration or gangrene come on. Moreover, in so great anxiety of the breast, and interruption of the passages, the mucous fluid passes out in all directions from the exhalant vessels, without being taken up by the absorbents, which are already quite full, in consequence of which it happens, that being collected about the lungs, mediastinum, pleura, pericardium, and heart, when the body becomes cold it coagulates and exhibits itself to the dissector under the appearance of a puriform mucus, with which these parts are more or less covered. Nay, sometimes, on account of the circulation of the blood being thus retarded, and, as it were, checked, its serous part separating from the rest, exudes into the cavity of the thorax, superadding hydrothorax to peripneumony,—which is named *hydro-pneumony*,—and the affected organs being at length pressed on in every direction, it deprives the patient of breath and life. When this affection happens, the urine flows more sparingly, or is suppressed; unexpected anxiety supervenes, and such difficulty of breathing as cuts off the patient in a few hours. With regard to the blood which is drawn, both in pleurisy and peripneumony, on cooling it coagulates into a hard, coherent mass, surrounded with a small quantity of serum. Generally, if not on the first bleeding, at any rate after the second or third,

a whitish mucous crust appears upon the surface, which is named the *inflammatory crust*, sometimes so firm, compact, and concrete, that it can scarcely be divided or penetrated, and appears in the middle hollow, and bent upwards and retracted at its circumference. Sometimes it is not white, but yellow and greenish; sometimes it is of a scarlet colour, or of an intermediate colour between white and scarlet. Likewise the cheeks are marked with a rosy spot, and much more frequently upon the side corresponding with the inflamed side of the lungs. Nor must the examination of the tongue be neglected; for, besides the dryness and thirst which usually attend acute diseases, its whiteness and roughness claim attention. Moreover, in the Aphorisms of Hippocrates it has been observed: "In inflammation of the lungs, if the tongue become all over white and rough, both parts of the lungs are inflamed; but when one half of it only is so, it corresponds with the inflamed part of the lungs." *Coac. N 400.*

* Storck, Morro, Scholinger, and Zimmerman, (Vol. II. p. 31.), mention that hydrothorax frequently supervenes on peripneumony, and the latter upon the former.

107. The causes which give rise to both complaints (97.) are the same which I have elsewhere enumerated, and from which other inflammations arise; but especially violent exercise of the body, chest, and lungs, particularly in cold, hot, or windy weather; the taking of very cold drink

when the body is warm ; sudden changes from hot to cold weather ; severe catarrhs and rheumatism being neglected ; the winter and spring season* ; the inhaling, or swallowing, of a poisonous, caustic, astringent, coagulating, or any unknown acrid principle, miasma, vapour, or halitus ; translations of morbid matter ; preceding diseases of the chest, both acute and chronic ; phthisis ; asthma ; hydrothorax ; keeping in the breath too long ; a mal-conformation of the chest and lungs ; and, lastly, a peculiar diathesis of the blood, named *inflammatory* ; although this last sometimes may not be the cause, but effect of inflammation.

* It is proven by a variety of facts, that the vernal and winter complaints differ much from one another. See *Com. de rel. in filip. nat. et med. gest.* vol. vii. P. i. p. 155.

108. The peripneumony and pleurisy which have been hitherto described are named *true*, *exquisite*, and *genuine*. But there are likewise spurious species of the complaint, which are so named because neither in violence, nor in the variety of the symptoms, do they equal the severity of the former. Sometimes a thick and acrid humour, or thin and acrid lymph, passes in abundance into the lungs, and, like a catarrh, excites preternatural heat and fever. In such a case the patient is exhausted with a cough, difficulty of breathing, and slow fever, without bloody spitting, or an abscess, or ulcer of the lungs. Nicolaus Piso, with most of the ancients, makes mention of the *peripneumonia spuria*, which clearly differs from

the *exquisite*, or *true peripneumony*, both with regard to its cause, and the mildness of the symptoms. *De Cog. et Cur. Morb.*

109. There is another species of spurious peripneumony, which, with Riverius * and Sennert †, we may name *pituitous*, because it seems to arise from thick, viscid, and sluggish phlegm, passing into the lungs, and obstructing them. It generally attacks old people, in the spring season, of a cold phlegmatic habit, addicted to the use of wine, and living in marshy situations, especially those of a cachectic disposition, who during the winter time do not perspire sufficiently. It begins with a catarrhal cough, which, however, is not constantly present, hoarseness, cold and heat alternating with each other, with manifest fever, but slighter in degree than it generally is in actual peripneumony. Oppression at the chest; weight; a dull and heavy pain; white, viscid, frothy expectoration, rarely streaked with blood; a soft, and not very frequent pulse, often small and weak; slight thirst; and the tongue being covered with a white mucus, are its remaining symptoms; to which, for the most part, is added, comatose sleep. I believe that it was observed by Sydenham ‡, and carefully described by him, under the name of *peripneumonia notha*. But he remarks, that in it the patient is likewise distressed with vertigo; that his head, when he coughs, seems to be split asunder; that he is distressed

with pains all over his chest; that every thing which is drunk is rejected by vomiting; and that the blood, when drawn from a vein, is covered with the pleuritic coat. The name of *peripneumonia notha* is likewise given by Boerhaave to that oppression of the lungs which generally takes place at the termination of diseases, and is commonly the forerunner of death. But Lieutaud || rejects this disease of Sydenham as uncertain and doubtful; nor does he subscribe to the opinion of Boerhaave, having been at times disposed to spare no one.

* *Prax. med.* cent. i. obs. 98. † *Præd.* l. ii. P. ii. c. 16.
‡ *Obs. circa morb. acut. hist.* sect. 6. c. 4. || *Synops.* vol. i.

110. Those who assert that pleurisy consists in an inflammation of the pleura and side (101.), derive the genuine complaint from the pleura and internal intercostal muscles, being inflamed*; and consider that species as *spurious* which depends upon inflammation of the external intercostals. But such is the vicinity and connection of these parts, that they can scarcely be inflamed separately, or, if that ever happen, the disease of each cannot be readily distinguished. We shall therefore give the name of *bastard pleurisy* to that inflammation which affects the side itself, especially the intercostal muscles and their sheaths; nor is it of much consequence to inquire whether at the same time the pleura be affected, which is probable, and sometimes happens. For the genuine pleurisy (98. to 108.) differs very widely from this spu-

rious one, because in the latter the pain is increased on pressure; the patient cannot lie upon the side affected, on account of the aggravation of the pain, reclining more conveniently upon the sound side; sometimes the external parts swell, become painful, and not unfrequently likewise exhibit some degree of redness. The fever and difficulty of breathing are less violent than in the genuine species of the complaint; nor is the pulse so hard and *serrated*. There is generally either no cough, or a slight and dry one, unless the complaint be combined with a taint of the lungs. Nay, Zeuiani affirms † that the cough and expectoration are absent in the pleurisy affecting the pleura, which I myself have more than once observed.

* The chief of these are, Riverius, Lommius, Nicolaus Piso, and Sennert. † L. c.

III. According to some, likewise, the bastard pleurisy is a rheumatic pain of the side, generally preceded by shooting pains of other parts, as of the neck and shoulder-blades, and either no fever is present, or only a slight one of the lymphatic kind. This pain, on pressure, or making a full inspiration, and by the motions of the body, is made to return, and is aggravated, but does not excite a cough, unless a catarrhal complaint be combined with the cough; or occasions a dry one only, unattended with a spitting of blood. Of this kind are, the scorbutic, venereal, hypochondriacal, or flatulent pains of the side, fixed

under the false ribs, which are unattended with fever, and are often shooting, and not to be referred to a fixed seat. To this place also belongs that affection of the side, or bastard pleurisy, which arises from crudities in the *primæ viæ*, from thick and pituitous food, from mulhrooms, bulbi, and similar things, which irritate the stomach and intestines, and affect the superior parts by consent *. Under this head likewise comes the pleurisy occasioned by worms, which affects the hypochondres lower down, and extends by sympathy to the chest, and sometimes to the lungs. Some authors give the name of *spurious pleurisy* to every pain affecting the false ribs; because neither the pleura nor lungs reach to them.

* This is the *pleuritis notha* of Platner, Licutaud, and others. See Nic. Pifo, *De cog. et cur. morb.* l. ii. p. 86.

112. It may also happen that pleurisy (110. 111.) may be conjoined with peripneumony itself, both from the beginning and in the progress of the complaint, giving rise to the disease which Baroni * has expressly named *pleuro-peripneumonia*. Moreover, pleurisy, on account of the part affected with the pain, is divided into *ascending* and *descending* †, as also into *posterior*, or *dorsal* ‡, and *anterior*. Hippocrates || also proposes making another division of the complaint into *dry* and *moist*. Pleurisy, likewise, in the same manner as peripneumony, is either *primary*, or *secondary*, or *symptomatic*. Among the secondary, or symptomatic, species, the chief are, the putrid, bilious §,

gastric, arthritic, phthifical, exanthematic¶, the miliary, variolous, morbillous, ardent, convulsive, catarrhal**, periodical, metastatic, hydrothoracic, lacteal, lochial, and the like. Of these, however, although the species called *bilious* is generally secondary and symptomatic, sometimes it is primary and commences with fever itself. A description of such an one may be read in Guidetti ††, who remarks, that in these bilious pleurifies there were shooting pains; dry and troublesome cough, attended with a scanty serous expectoration, or a yellowish, bloody, and frothy one, brought off with the greatest difficulty by the effort of coughing violently; a very quick pulse; intense heat; flushed cheeks; great anxiety; troublesome thirst; constant watching and tossing. The blood, when drawn once or twice, remained of a beautiful red, and the patients, after the bleeding, became worse. They died on the fifth day. When bleeding was not employed, they were carried off on the seventh, ninth, or eleventh day. Vomiting alone proved serviceable. A cold winter had preceded, and was succeeded by a warm spring. The author quoted is of opinion that they were of an erysipelatous nature‡‡.

* *De pleuro peripneumonia, &c.* Huxham on *Fever*s, &c. p. 305. Deplaigne, *Rec. de observ. de med. &c.* Juill. 1757. vol. vii. p. 168.

† Hippocr. ii. *Acutor.* ‡ *Id.* iii. *De morb.* || *Id.* i. *Acutor.*

§ Concerning *bilious pleurisy and peripneumony*, see Tissot's *Letter to Zimmerman*; Morgagni, *De sed. et caus. morb.*; Manetti, *Consulatio et annotaz. e giun.*; Ang. Galli, *Advers. med.*; Dall'Armi, *Sag. di med. prat.*; Targioni, *Gazet. salut.* n. 72. 13. 14. &c. an. 1783; be-

sides Baglivi, Lancisi, Sydenham, Guidetti, and many other authors.

¶ Concerning the *secondary exanthematic pleuritis*, the author treats in the proper place. See Concerning the Morbillous and Variolous, Vol. III. par. 249. 254. 276. and likewise Concerning the Miliary Species in the same volume, par. 403. 405. 408. All which remarks may be transferred to this place, as applying to the *primary* complaint. *Germ. Editor.* ** See

Vol. I. Of Fevers, par. 346. 356. and elsewhere, where he treats of Intermittents in the same volume. †† *De pleurit. bilios. dissert.* ii.

‡‡ *Id. ib.* See also Deplaigne, l. c. by whom both the symptoms and treatment of the disease are described.

113. Some of them also may be named *benign*, others *malignant*, according as they are attended with symptoms of malignity or not. To the malignant species belongs a kind of peripneumony, which, on account of its rapid tendency to gangrene, is named *gangrenous* *. It is generally epidemic, sometimes attacking only one set of people, or prevailing in one place, or family, or monastery, and very frequently proving fatal. It appears to arise from a poisonous or putrid miasma, or from a caustic and acrid principle inhaled into the lungs, and adhering to them, or first infused into the blood, and afterwards thrown into motion by the fever, and carried to the lungs, depriving them very quickly of their sensibility and irritability. Frequently so hostile and putrid a principle is given out by corrupted bile, or from the *primæ viæ*. But it is generally then a symptom of the *gastric*, or *bilious*, fever. The patients, when seized with it, complain of an immense weight at the chest; breathe with the greatest difficulty; cough; generally spit out nothing, or only bilious, pure,

very thin, frothy unconcocted matter, sometimes also blackish sanies. Some of them have scarcely any cough, but sigh in order in some measure to relieve the anxiety and weight with which the breast is pressed, having a great degree of despondency marked in their face and eyes. The lungs then, on account of the sensibility and irritability being now destroyed, seem to become almost lifeless. The pulse is at first strong, but in a short time becomes weak, languid, rare, and irregular. Sometimes a malignant exanthematous eruption, and violet-coloured petechiæ, supervene. And the symptom, which is common to all malignant diseases, namely, the loss of strength, is present in this also.

* See Galen, Barthollet, Triller, Huxham on *fevers, pleurifies,* and *peripneumony*, and his *Observ. de aere*, vol. iv. Jan. Feb. Mar. 1746. See also *ag. di med. prat. di P.P.* Dall'Armi, P.iii. p. 235. to 241.

114. The blood, when first drawn, appears of a scarlet colour, and tenacious of its serum, but soft, delicate, and not coherent. When drawn a second time, it exhibits a livid crassamentum, very lax, surrounded with a great quantity of yellow, turbid, or greenish, or reddish serum; but when drawn at that time the crassamentum is almost black, sanious, and dissolved. If discovered with any inflammatory coat, it is yellow and sanious, and very slowly coagulates. This is generally the case. But I have observed more

than once, in some such malignant and gangrenous peripneumonies, the blood covered with a very thick buffy coat, perhaps because the poisonous miasma had not yet corrupted the texture of the blood. Nor does it uniformly happen that the strength at the beginning is reduced, as in other malignant diseases; for frequently before the disease, and at its commencement, it is sufficiently good, although in the progress of the complaint, when gangrene takes place, it then sinks, as is natural to suppose.

115. We are informed by Hippocrates *, and since his time by Ballonius, Baglivi, and not a few others †, that the lungs are sometimes attacked with *erysipelas*. Lieutaud denies the possibility of this, because erysipelas appears to be a disease of the skin only, not of the internal parts. But his authority ought not to weigh so much with us as to make us withhold our belief from other celebrated writers ‡. For I myself know that there are erysipelatous pleurifies and peripneumonies, generally *dry*, which, as Ballonius says ||, are occasioned by an acrid, subtile, malignant serum, incapable of concoction, or of being discharged, and exciting rather a wavering phlogosis than fixed inflammation, by which the lungs are suddenly overpowered, as it were. The presence of the disease is denoted by flushing of the face; a dry cough; great dryness of the tongue; burning heat of the internal viscera; constant anxiety and restlessness; sudden loss of

strength; and slight pain. But Hippocrates § adds, acute pungent pains, which shoot sometimes to the spine of the back, sometimes to the sternum, but wavering and transitory, such as I myself have frequently observed. Besides, Gorter ¶, in addition to these, mentions a quick, though not very hard pulse, fiery-coloured urine, the complaint's being easily translated, and the absence of the inflammatory coat in the blood when drawn. Dissection discovers the lungs to be very red, or black and gangrenous; but soft and flaccid, not hard, and overloaded, as in real pleurisy and peripneumony. Nor is it uncommon for the fever to be very ardent, the pulse violent and very quick, and the breath very warm; and for these symptoms to remit nothing of their violence, even after several times drawing blood, which is generally very red and frothy. Those who are attacked with this disease are carried off in a very short time, nay, expire quite suddenly, as we are informed by Baglivi **; which indeed is confirmed by my own experience. Can this be a variety of the *gangrenous peripneumony* (93.)? Several authors, among whom is Sauvages ††, confound the present complaint with the bilious pleurisies, which are frequently *gastric* and *symptomatic*. Guidetti ‡‡ is likewise of opinion that they were bilious erysipelatous affections.

* *De intern. affi.* n.8. † Schenck makes mention of the erysipelatous peripneumony.

‡ Morgagni (*De sed. et caus. mor.*

epist. xx. n. 12.) does not deny that inflammation of the lungs sometimes consists in a *fleeting redness*, that is, when it is of the nature of *genuine erysipelas*. De Haen also (F. ix. e. iv. p. 125.) supports the same opinion, as he observed the lower lobes of the brain inflamed, but not indurated, as in other peripneumonies, or pleurifies.

|| *Epid.* i. p. 83. & iii. p. 20. § L. c. ¶ *Prax. med.*

** *Append. de pleurit.* †† *Nesol.* vol. i. p. 466. ‡‡ *Dissert.* ii,

THE PROGNOSIS.

116. PERIPNEUMONY is always attended with more danger than pain, and almost certainly proves fatal, when, to the greatest difficulty of breathing, delirium also is added, or when it arises from angina, or supervenes on some acute disease; for it either proves fatal within seven days, or terminates in abscess and consumption. Sometimes in a severe case, if blood be discharged copiously from the nose, and copious, bilious, and frothy stools take place, there is some reason to hope for a recovery; otherwise, upon the *fourth* day, or upon the *seventh* at farthest, it terminates in death. It is a bad symptom when phrenitis *, or convulsions †, or a diarrhoea ‡, which check the expectoration, supervene; or when the patient wishes to recline ||, or the urine is quickly passed after drinking §, or when that which at first was concocted after the fourth day comes off thin ¶. Frequently, when the inflammation is slight, and does not spread widely, it is resolved merely by a copious, easy expectoration, slightly streaked with filaments of

blood ; sometimes by urine depositing a copious sediment ; not unfrequently merely by perspiration ; less frequently by a mucous diarrhœa mixed with streaks of blood ; or by a bilious one. It most frequently, however, happens that, when the inflammatory congestion is resolved, some part makes a passage for itself into the bronchiæ, in order that it may be expelled by expectoration, while another part, passing into the veins, and circulating through them, applies itself to the various excretories, that it may be excreted. The kidneys receive it, and excrete it in thick, turbid, and copious urine, which deposits a red and lateritious sediment. The resolution of this inflammation is generally preceded by deep-coloured turbid urine, which, upon cooling, deposits a white mucous matter adhering to the sides of the glass, and exhibits a cuticle upon the surface of the same nature, forming a circle, as it were, which adheres to the vessel. Nor is it a rare occurrence for peripneumony and pleurisy, on the fourth or seventh day, or somewhat later, to be critically resolved by miliar pustules breaking out ** ; which I myself have more than once observed.

* Aph. 12. sect. 7. † L. c. ‡ Aph. 16. sect. 6. || *Coac. Prænot.* n. 497. § *Ib.* n. 579. ¶ *Ib.* n. 415. 580. ** See *Sægg. di med. prat. di Pietro Paol. Dall' Armi, P. ii. Giunta all' osservaz.* xxxi. Le Roy observed a pleurisy, attended with a spitting of blood, difficulty of lying upon the sound side, and frequent and copious, though not fetid sweats, critically resolved upon the fifth

day, by a copious eruption of red, itchy, miliary pustules (*Mélan. de phys. et de med. prem. Sec. p. 209.*).

117. The best kind of expectoration is that which is white, smooth, and inodorous; which becomes ripe upon the fourth day*, and assumes a white or citron colour, being discharged readily and copiously. If it appear upon the third day, it indicate a disease of short continuance; if later, one of long continuance. Nor ought we to be alarmed at the beginning of the disease by the matter expectorated being of a dark-brown colour, and tinged with blood, providing it be discharged easily, relieving the respiration, and being accompanied with a milder degree of fever. That which does not become concocted upon the seventh day is almost a fatal symptom, or at any rate renders the issue doubtful. When it is liquid, and like saliva, it denotes duration of the disease; that which is frothy, viscid, or watery, is unfavourable, on account of being useless; it is still worse if it be purely bloody. Liquid, green, black, or putrid matter, generally denotes the approach of gangrene, and death†.

* Concocted expectoration is like pus, not clear nor viscid, nor too yellow nor too bloody, nor green nor livid, as Hippocrates observes. † *De vic. acut. § iv.* See *Coac. Prænot. n. 13. to 17.*

118. A bilious tongue, if it appear so at the beginning of the disease, portends that the complaint will terminate in seven days; but if it take place upon the third or fourth day, it denotes that it will hold on for nine days. Those patients

in whom the pains at the beginning are slight, and are increased upon the fifth or sixth day, generally live to the twelfth, and seldom survive; they run the chief risk upon the seventh and twelfth day. But if they survive the fourteenth, they recover. Those patients likewise recover in whom a pain and abscess arises in the internal part of the ear, giving rise to a discharge of pus, as Baglivi observes. It is likewise generally a good symptom, if, on blood being discharged, the viscera be relieved, although it should return again. For there is reason to hope that it will yield to repeated bleeding.

119. The *dry pleurifies* generally threaten certain death, unless a flow of urine supervenes. Those species, also, which proceed upwards or backwards are alarming, unless they be spurious, and seated in the external muscles (109. 110.). The pleurifies which are not concocted in fourteen days * frequently undergo suppuration, if they do not suffocate the patient. But the followers of Hippocrates † extend this time to twenty-two days, during which, if they be not concocted, suppuration is threatened. In advanced life, and during pregnancy, they are generally fatal, or occasion abortion; nor do they cause less danger when they return, or when the patients have laboured several times under the same disease; although patients sometimes recover from these also.

* Hippocr. sect. v. ph. 8. † Lib. i. *De mort.* n. 24,

120. Nor is it safe when the pain disappears before the fever. For, upon its ceasing, if the fever still continue, and do not depend upon any other cause, or, which is worse, be occasionally aggravated, and other parts begin to be affected with new and severe symptoms, one of two things must happen, either *suppuration*, where the pain is situated, or a dangerous translocation to these parts. But if the pulse become small, frequent, and intermitting, attended with a cold sweat, and if, twelve hours afterwards, delirium follow, it is evident that the inflammation has terminated in gangrene. Lastly, if the fever, which still continues, has paroxysms, accompanied with shivering, or if it generally return in the evening, and the pain, particularly during the accessions, should occasionally subside, *suppuration* may be certainly suspected, the presence of which may be pronounced with still greater certainty, if to these symptoms be added a sense of suffocation, and if the fever be of long standing, while a sweetish taste is perceived in the matter expectorated.

121. Hippocrates has pronounced the conversion of pleurisy into peripneumony, as being bad, and with good reason (aph. 11. sect. 2.); for it indicates that the inflammation is more extensively diffused over the lungs. When this takes place, the cellular texture, by which the vesicles of the lungs are connected, and the minute vessels of them are so filled with a tenacious and polypous

inflammatory gluten, that the spaces and vesicles for containing the air being compressed can no longer admit the air in inspiration; whence it happens, that, not only because the lungs cannot be expanded, the blood cannot be transmitted through the minute arteries, and therefore increases the infarction of the lungs, but also, in consequence of the nerves every where being distracted, lacerated, or compressed, as it were, all sense of pain is obliterated, and succeeded by a fatal anxiety. And, in fact, the lungs, from being flaccid and soft, become hard and compact, completely resembling the substance of the liver; as dissection proves. Likewise, if a discharge of blood from the nostrils take place sparingly, it is bad; if too copiously, it exhausts the strength. Lastly, it is the worst possible symptom, if a great collection of matter occasion a sound in the lungs, if the patient's face assume a sorrowful appearance, and the eyes become suffused with a yellow colour.

122. But although the pulse, which, as I have already remarked, may vary, be strong and regular, we must not rashly trust to it; for it may give false hopes to the last moment, and after all suddenly fall. Sometimes, however, from being hard, irregular, and small, it becomes soft, regular, and great, like that which is named *critical*. In the mean time, the difficulty of breathing increasing more and more, the patient, even while

speaking, or endeavouring to shift his posture, suddenly breathes his last. It is proper, therefore, to attend to the respiration more than to the other symptoms. The easier it is, the more favourable event does it portend ; and *vice versa*.

123. It is likewise considered as a fatal symptom by Baglivi, Lancisi, and Boerhaave, if the blood which is drawn be florid, and without the white or pleuritic coat ; for they think that the thick, tenacious, concrescible matter, which ought to have been thrown off, remains in the lungs, and aggravates the complaint. But, so far as I can judge, the absence of this coat does not always portend a worse event, as it frequently at length appears on the second, third, or fourth bleeding, and because there are many things, as Sydenham and De Haen chiefly have shewn, which may prevent the appearance of the inflammatory gluten. Nor, when danger is threatened, in consequence of its absence, ought it perhaps to be ascribed to its being retained ; for, from a thin acrid fluid, which is therefore disposed to dissolution, an inflammation, like an erysipelas, affects the lungs, and quickly induces mortification.

124. Likewise, many of these prognostics may be applied to the different and manifold complications of such complaints, with this difference only, that if simple peripneumonies and pleurifies be attended with great danger, the greater will that be attending the pleuro-

peripneumony, in whatever acceptation the word be taken (103. 112.), or those inflammations which attack both sides of the lungs. The same thing may be said of the inflammations of the *mediastinum* and *pericardium* (103.). For both of them are liable to the same changes, but are deprived of the benefit of the expectoration. The latter, also, on account of its vicinity to, and complication with, the heart, is much more dangerous.

THE CURE.

125. WITH regard to the cure, each of the species require nearly the same as that of peripneumony (98.), and pleurisy (100. et seq.). And, as it depends upon the same indications which belong to every inflammation*, at the very beginning copious bleeding must be ordered, and, after a short interval of a few hours, it is to be repeated, until the hardness and impetus of the pulse, and violence of the inflammatory symptoms abate, succeeded by those of resolution and concoction (105.). It is a proof that the inflammation has abated, when the pain is greatly diminished; when the respiration becomes freer; the cough milder; when the pulse returns to its former softness; when it becomes more uniform and slower; while the fever abates, the expectoration is discharged more easily, and turbid urine is voided, or the whole skin is bedewed with

sweat. Blood must therefore be drawn quickly and liberally, especially in pleurisy, which is supposed to require and bear more copious bleeding than peripneumony, providing the patient's strength, age, temperament, and habit, as well as the season and weather, do not contra-indicate it. Experienced practitioners do not hesitate to draw blood, at the first bleeding to the extent of twelve, fifteen, or even twenty ounces; nay, some, after a short interval, permit the same quantity to flow from the same opening †, and affirm, that in this manner the disease is cut short at the beginning. However, the strength of the patient must be principally kept in view, as being necessary for the concoction and excretion of the matter, which ought to take place generally at the height of the disease, and after its turn, by the expectoration. It is better to let blood near the part affected, or from the side which corresponds to the pain, as more certain and ready revulsion is the consequence, according to the observation of almost all physicians ‡; and it may be repeated as long as the severity of the pain, difficulty of breathing, and hardness of the pulse, seem to require.

* See *Commentary on Inflammation*, Vol. I. † Sims, *Epid. dis.*

‡ Although blood drawn from the affected side commonly proves more serviceable, this does not happen so uniformly as some suppose. For Rozier remarks, that Gesner, in a species of epidemic and malignant pleurisy, found bleeding from the arm useless, while from the foot it proved of the highest service.

126. But if the congestion of the lungs appear to be so great, that not only the inspiration is much affected, but also the return of the blood from the head retarded, in consequence of which the jugular veins become turgid, the face livid and red, and an inexpressible anxiety, accompanied with an obscure pulse and delirium, comes on, there is not a more efficacious remedy than opening one of the jugular veins. This very quickly relieves the head, and produces revulsion * from the lungs, by emptying the vena azygos, and consequently the bronchial vein.

* Most authors contend, that no revulsion can take place in diseases of the chest; but they are deceived, for the bronchial artery arises either from the aorta under its arch, or from the first of the inferior intercostals, or from the superior intercostals. The blood which flows back by the bronchial vein and intercostal veins, is carried to the vena azygos. But when the axillary and bronchial veins, in consequence of opening the vena basilica, are emptied, the blood is derived in greater abundance into the corresponding arteries. Hence less flows into the intercostal arteries, and consequently into the bronchial one. Thus the revulsion from the lungs, which is denied by some, takes place. But likewise the vena cava, becoming somewhat less full, gives room to the vena azygos, into which it may sooner empty itself, and causes it to receive from the arteries which end in it a greater quantity of blood. In this manner both the lungs and thorax, when inflamed, may be relieved by opening a vein in the arm or neck. Lastly, the bronchial artery communicates every where with the small branches of the pulmonary artery. A revulsion must therefore necessarily take place from them also. Placentini, in his book concerning the employment of venesection, takes notice of this (p. 88. 89.).

127. But if this remedy afford no relief, or if the fatness of the neck prevent its being employed, some, with Aræteus and Huxham, ad-

vise letting blood from both arms at the same time, and the respiring of cold air, that the humours may be the more readily thrown off from the lungs *. Nor is it without advantage to inhale by the mouth the vapour of vinegar and hot water ; to relax the abdomen with fomentations ; to dip the feet and hands in warm water ; and in some measure to irritate the limbs by means of ligatures and frictions.

* Rozier remarks, that arteriotomy is proposed here by some, and that it may be of service. But at the same time he warns the practitioner, that this can scarcely be done without danger, excepting in the temporal artery. For he does not think that Avenzoar is to be imitated, who, when labouring under inflammation of the chest, opened his radial artery with success.

127. It sometimes happens, on account of the rapid loss of strength which follows bleeding, particularly in malignant diseases, that a vein cannot be opened as long as necessary, or that the constitution of the patient does not bear it. In that case, after one or two slight bleedings, or even immediately at the beginning of the disease, it is attended with advantage to apply dry and bloody cupping-glasses to the back and breast, or to clap leeches on the hæmorrhoidal veins, especially in persons accustomed to a discharge from them ; and to exhaust as much blood as the strength can bear, and the violence of the disease requires. The blood must likewise be drawn with the greatest caution in the peripneumony which arises from a metastasis, if the strength be

exhausted, and the strength of the pulse, and goodness of the whole habit, do not authorise it. Some advise not opening a vein beyond the fourth day, being afraid of checking the concoction, and the excretion of the expectoration, by which the disease is resolved. But although the disease frequently arrives at concoction within the fourth day, this is not an invariable occurrence. Not unfrequently the violence of the disease exceeds those limits, and its crudity is prolonged beyond that period. When this happens, provided violent symptoms of crude inflammation, especially pain, difficult respiration, great fever, and a violent and hard pulse, continue, blood may be drawn at any time, as the most experienced practitioners are accustomed to do. Nay, it even ought not to be omitted when the inflammation, after being allayed, returns again, whatever the day be, whether it be the seventh, fourteenth, twentieth, or later.

128. As bleeding, therefore, in inflammation, is considered as being by far the best remedy, so that our principal reliance is placed in it, and without it scarcely any advantage is derived from the other remedies employed; it follows that, when peripneumony is threatened, it ought to be employed to prevent it. Sometimes, however, the disease is so slight, and the fever so inconsiderable; the respiration so little affected, while the expectoration, from the beginning, being yellow and tinged with blood, is freely dis-

charged ; or the urine deposits a copious white sediment ; or a copious bilious diarrhœa occurs ; and the skin is all over bedewed with a sweat, in consequence of which the heaviness or pain of the chest so remits, that it appears that the inflammation is resolved ; in which case most advise the bleeding to be omitted, that the operations of nature may not be improperly disturbed. And this ought to be the more attended to, the less the relaxed condition of the solids and fluids, and favourable temperament of the body, seem to oppose the resolution.

129. It is likewise improper in that case (128.) to attempt any other evacuation. We must then only take care that the salutary motions and efforts of nature be performed, which is effected by temperate air and the frequent renewal of it ; by inhaling the steam of warm water ; by diluent, saponaceous, cooling drink, taken warm ; by gentle clysters, and emollient fomentations applied to the belly ; by tranquillity and rest ; by weak diet ; and by all those things which open the pores, correct and resolve the humours, and promote the excretion of the matter which is corrupted, or adhering to the lungs, by expectoration, by the kidneys and pores.

130. For alleviating the pleuritic pain, the proper remedies are external applications of things which prove emollient and discussing, or refreshing ; namely, sponges dipt in a decoction of mallows, chamomile, mellilot, and elder-flowers,

with the addition of a little vinegar; a bladder half-filled with oil or milk; cataplasms of marsh-mallow-roots, of mallow-flowers, lint-feed, and fænugreek, prepared according to art; liniments of the ointment of poplar-trees, or of the oil of violets, water-lilly, hyoscyamus, and the like; and if it be necessary to employ more discussing than relaxing means, it is necessary to add to these camphor and saffron. Van Swieten recommended the application of flannel, wet with an emollient decoction, to which soap has been added, or with milk and water, to be applied to the part, and frequently renewed, that they might not prove hurtful by cooling. With the same view, he applied to the part hot bricks. The soap is used in the proportion of half an ounce to the pound of the decoction. But if the pain do not yield to these remedies, nor abate, after scarifying the part deeply, a cupping-glass ought to be applied, and as much blood as possible drawn. For in this manner the inflamed part, whether it be internal or external, is very quickly relieved, and without loss of strength. It is likewise attended with the greatest advantage, as has for some time been well known, to apply a blister of cantharides, which is both remarkable for its discussing and resolving property, and draws the humours to the surface, in consequence of inducing an ulcer. But it is very probable that these are employed more advantageously in that species of pleurisy which is

seated in the containing parts of the breast (105. 110.), and especially in that which is occasioned by a *rheumatic* pain (111.), and proceeds from cold, than in the species affecting the lungs only; although it cannot be denied that they possess some revellent property in this species also, as well as in the *pleuro-peripneumonia*, because probably, by drawing a greater quantity of blood to the external thoracic vessels, its appulse to the internal vessels, and especially to the bronchial artery and lungs, becomes less. But in whatever manner this happens, it is established beyond a doubt, that these remedies sometimes dispel the pain with the greatest dispatch, and act like a charm. But if the cantharides, when applied without having been preceded by bleeding, or after blood being only once drawn, immediately dispel the pain, and the morbid matter has not passed out of the body by sweat or any other critical evacuation, a prudent physician will draw blood a second time, that the complaint may not attack other parts in consequence of its translocation *.

* Rozier, l. c.

131. But if the pain distress the patient so much as to occasion constant watching, or if the heart by consent become so spasmodically affected as to give rise to a small, quick, low pulse, and if the respiration seem to be prevented, it is necessary to have immediate recourse to paretics. Of these, crude opium, or the *lauda-*

num liquidum of Sydenham, or the *pilulæ de cynoglossa*, or the *diascordium Fracastorii*, or the *syrupus de meconio*, as having been frequently employed by others as well as myself with success, hold the chief rank; and will be the more serviceable, if a troublesome cough should require being allayed. For sometimes so great is the acrimony of the inflammatory cause, and the irritability of the parts affected, that a constant inclination to a dry cough is experienced, completely depriving the patient of rest. In which case, demulcent, anodyne, and oily remedies must at the same time be employed. Therefore, decoctions of marshmallow-root, or barley, or faleb; mucilages of gum-tragacanth, or gum-arabic, or of the seeds of flea-wort, fænugreek, or bismalva; emulsions of sweet almonds, and of the seeds of white poppy; linctusses of fresh lint-seed oil, or oil of almonds, and of the syrup of wild poppy, or marshmallows, may be employed. But when there is great congestion of the lungs, causing strong inclination to sleep, there is danger of suffocation; or when symptoms of concoction are present, and the matter is easily expectorated, it is proper to abstain from those remedies which contain opium, or, at any rate, they must be employed with the utmost caution, for the expectoration may be checked, and the patient suffocated, by the employment of opium*.

* The opium is deprived of its narcotic property by employing the method adopted by Boucquet, already described in the note upon par. 232. of the fourth volume.

132. After one or two bleedings, if a bitter taste of the mouth, the tongue being covered with viscid mucus, if nausea, and other symptoms of crudity, or other putrid colluvies in the *primæ viæ* be present, or if the belly be bound, it is necessary to relax it with some gentle medicine. The apprehension which some practitioners entertain of checking the expectoration so necessary in these complaints, by means of purging, is groundless, providing the belly be purged at the beginning, while the disease is still crude, by gentle medicines. Lint-feed oil, or that of olives, or sweet almonds expressed without the aid of fire, manna, cassia, dried raisins, Glauber's salts, whey prepared with cream of tartar, or tamarinds boiled in it, and the *syrupus aureus salutaris*, are employed with the greatest success, especially when an accumulated bilious colluvies stagnates in the duodenum and neighbouring parts. But the safest of all remedies, during the progress of the disease, and through all its stages, are injections. These, without doing any injury, keep the belly open, and, when it is bound, relax it with great relief to the disease.

133. Besides repeated bleeding, until the force of the inflammation has been broken, and purging, by which the *primæ viæ* are freed from fordes, and a flow of humours is derived to the inferior parts; it is likewise proper carefully to attend to inducing a certain degree of laxity in the solids, to allay the heat of the blood, to blunt

its acrimony, and to dilute lentor, if any be present, by means of a ptisan of barley, or oats, drunk abundantly and warm; by infusions of violet-flowers; of wild poppy; of lesser daisy; of verbasicum; by decoctions of the roots of grass, of liquorice, marsh-mallows, raisins, and jujube-tree; by emulsions of the cold seeds; to which occasionally may be added, those things which possess a gently attenuant, incisive, and saponaceous property, as purified or antimoniated nitre, honey, simple oxymel, the rob of elder-berries, syrup of vinegar, and that of the juice of lemon, violets, currants, barberries, and similar fruits, by which not only is the adhering inflammatory matter more easily dissolved, but likewise the tendency of the blood and serum to concreate, corrected.

* The quantity of blood which ought to be taken must vary according to the patient's age, temperament, habit of body, and the season. In adults, Sydenham did not exceed forty ounces. But in our climate, when the pleurisy or peripneumony is exquisite and genuine, and proves obstinate, while the strength is sufficiently great, and the patient of the sanguine temperament, we frequently proceed to the extent of sixty or eighty ounces, or even more. Nor is childhood to be excluded from this evacuation. For in children, the proper proportion being observed, a vein may in like manner be opened, not once only, but twice or thrice, which is generally attended with the greatest advantage.

134. Under this head, likewise, come the diaphoretic antimony, without ablution; camphor; spiritus Mindereri, the root of calegula, and Virginian polygala, and that of our own country *.

and of marine fern boiled in water ; infusions of the tops of the *carduus benedictus* † ; of the *genepum Taurinense*, of the *scabiosa*, betony, &c. by which, also, a gentle sweat being promoted, it directs the force of the disease from the centre to the circumference ; which is attended with advantage, chiefly when symptoms of concoction appear, at least in the urine. Nor does it seem proper to intirely exclude here the jelly of hartshorn, gently acidulated with citron, or lemon-juice, and dissolved in a great quantity of watery drink, as it is said to promote a diaphoresis. Crabs eyes, boars-tooth, and goats-blood, which have been so much recommended by judicious practitioners, are now justly considered as being altogether futile remedies in the cure of pleurisy. To these some add spermaceti, of the emollient and resolvent property of which pretty strong proofs are to be found.

* Both species of *polygala*, whether that of Virginia, or that of our own country, prove incisive and expectorant. Its virtues have been celebrated by Tennent (*Mem. de la Societe Roy. ann. 1739.*) and still more by Bouvart (*ibid. ann. 1744.*). It is recommended principally in the cure of the dry pleurisy, and seems to possess something of a specific property. It first occasions vomiting ; afterwards it moves the belly, excites an expectoration, and shortly also proves diuretic. It is employed in the following manner : Rec. *Polygal. Virg. unc. 1. Decoq. in aquæ commun. pinta ad medietatis consumptionem. Colatur. dentur duo vel tria cochlearia singulis foris.* D. Paul, also, in his treatise on peripneumony, warmly recommends it. See *Extraç. litt. Europ. T. iii. an. 1762.*

† Lange observes : “ In treating the severest cases of pleurisy, after permitting copious bleeding, and repeating it according to circumstances in the side affected, when the patient’s advanced age;

bad living, or a virulent contagion, did not forbid its employment, merely by using the extract of the *carduus benedictus*, to the extent of at least four scruples every day, I have a thousand times restored patients to health. The efficacy of this remedy was known also to Geoffroy, who pointed out the necessity of employing it at Paris." *Misc. Verit. fascic. 1. p. 75. 76.*

135. The expectoration, which frequently ought to resolve the complaint, sometimes on account of its too great viscosity and coherence, can scarcely be brought off, or with the utmost difficulty. Sometimes, also, on account of the irritability and sensibility being overpowered, it is wholly suppressed. In that case, besides a pretty strong decoction of *polygala* or *dulcamara*, of which a few spoonfuls are to be occasionally given, we must have recourse to oxymel of squills, syrup of tobacco, the *syrupus de erysimo Lobeli*, spirit of foot, of sal ammoniac, kermes mineral, elecampane root, or Florentine orris-root. Some even do not hesitate to recommend the tincture of cantharides internally*. But it is a safer practice to apply them to the skin so as to raise blisters. For in this way they not only call forth the complaint, and excite the languid power of the solids; but, likewise, by introducing a caustic salt into the system, they dissolve the sluggish fluids, and promote all the excretions†.

* Fantini, *Breve istoria di due mediche osservazioni ec.* Faenza, 1777.

† Maret recommends the employment of blisters in pleurisy. He observes, however, that they may be employed in the *spurious com-*

plaint, without venesection, which the *real* pleurisy requires, being premised, *Mem. de l'Acad. de Dijon*, T. 1. p. 93.

136. Hence, even at the beginning of the complaint, when bleeding cannot be permitted, (131.), or when the expectoration comes off with difficulty (134.), or when the pain is very urgent, they may be applied to the breast, arms, thighs, calves, and soles of the feet. For such is their power, that they have frequently been observed to snatch the patient from the jaws of death. But the benefit to be derived from them depends not a little on the season, climate, and constitution of the patient. For sometimes so far from proving serviceable they are even alleged to do harm. It must be observed, however, that at times the expectoration is suppressed on another account, namely, a return of the severity of the inflammation. When this happens, the fever, pain, and difficulty of breathing, together with the other symptoms, suffer an aggravation. In that case, when the pulse is strong, hard, or great, and the strength not much exhausted, nothing is more efficacious for recalling the expectoration, than a second bleeding, and next having recourse to the remedies pointed out in par. 30. et seqq.

137. Hitherto I have been treating of the cure of *true* peripneumony and pleurisy. But it is by no means always necessary to have recourse to all the remedies mentioned. Frequently mere bleeding, and the copious drinking of water,

prove sufficient. But the *spurious peripneumony* of the ancients (108.), described by Pifo, seems to require sparing and repeated bleeding, demulcents, involving and thickening remedies; gentle cathartics of cassia and manna; blisters; revellents; and correctors, as whey, and milk itself. In like manner, the *spurious peripneumony*, by Riverius named *pituitosa*, and by Sydenham *notha*, requires bleeding, but not so frequently repeated; as also gentle cathartics, or at least mild emetics, and every kind of revellent and incisive remedy (133. 134. 135.). The *malignant* and *gangrenous* species of the complaint (113. 114.), scarcely bears one bleeding, though employed at the very beginning of the disease. For when repeated, it for the most part reduces the strength; increases the anxiety; quickly induces watching and delirium; as also trembling, cold sweats, and, lastly, even sudden death, while the patient is complaining, or conversing with his friends. Sometimes, however, certain epidemic constitutions are observed, which are more favourable to bleeding. But here also the utmost caution is requisite. After the bleeding employed at the very beginning of the disease, vomiting may be once or twice excited by means of tartar-emetic, largely diluted, and taken at divided intervals, or by means of oxymel of squills, or ipecacuanha. Afterwards *alexipharmacs* and *antiseptics* may be employed. Camphor, bark, scordium, and cha-

momile, are the most proper remedies in this case. It is likewise serviceable to inspire the vapour of water, impregnated with spirit of sal-ammoniac, and resins gently burnt. The violence of the complaint, however, ought to be quickly drawn outwards by means of cantharides applied to the breast and legs. Moreover, in these gangrenous and malignant diseases of the breast, the patients ought to be allowed more generous diet, and even some wine.

138. So various are the peculiar *constitutions* of this disease described by authors (137.), that it would be an endless task to enumerate them individually *. And, what is a great deal worse, they often baffle the most approved method of treatment; nay, that which has formerly proved serviceable in a new epidemy frequently turns out by no means well. Hence the practitioner, however great his experience may be, is frequently at a loss what remedy to employ. It is, therefore, requisite that he should inquire into the peculiar disposition and *epidemic character* of the reigning disease, that by experiment, as it were, he may be enabled to ascertain the most suitable plan of treatment.

* In the *Recueil d'Observations de medec.* already quoted, accounts of such epidemics are frequently to be met with. Besides that one already quoted from Deplaign, another is described in the same work (p. 295.) which was observed in Oct. 1757.

139. The species of the complaint, named *erysipelas pulmonum* (115.), comes next to be con-

sidered. In it bleeding ought to be employed with the utmost caution, as it frequently proves hurtful. It is prejudicial likewise in the *bilious pleurifies*, both *primary* and *secondary*, in which emetics and cathartics are preferable. For as the complaint is occasioned by the highest degree of tenuity and *warm acrimony* of the fluids, we do not find the inflammatory gluten, by which the blood is disposed to concrete and cohere; nor are the viscera after death observed to be covered with a mucous membrane (106.), requiring heat for its separation. Besides more sparing bleeding, therefore, it is especially necessary to employ cold drinks *, when the climate, temperament, and age of the patient, and the season of the year, are very warm, or the solids are so languid, that they cannot be restored to their former vigour, unless by the use of cold drink. It is likewise proper occasionally to interpose cathartics, especially of the subacid kind, in order to evacuate the bilious or warm colluvies from the bowels. The chief of these are, tamarinds, crystals of tartar, and acidulated whey.

* Bertini in a case of pleurisy (probably of the *erysipelatous* kind), employed cold water with advantage (Mart. Ghisi, *Lett. med. lent.* 1. p. 33.). See Deplaign's method (*Recueil d'observations de medec.* T. vii. Juillet, p. 168.

401. Sometimes not only in the *erysipelas pulmonum*, but also in *peripneumonies* and *bilious* and *ardent pleurifies*, the fever is so violent, that even after several bleedings it remits little or nothing, and

the pulse continues remarkably frequent and strong. I look upon the most convenient remedy for allaying the excessive violence of the fever to be, sulphuric acid sweetened with six times its quantity of the syrup of violets, to be taken to the extent of one spoonful every hour, a large draught of water being always drunk above it. Tissot likewise, I find, recommended this remedy. For all acids powerfully diminish the irritability of the heart, correct the alkalescent acrimony, and remarkably allay the heat of the blood *. Hence, when the febrile motion becomes immoderate, it may be readily restored by these means. But the more acrid acids aggravate the cough, and those of the vegetable kingdom likewise coagulate the blood, or predispose it to coagulation †. They ought to be employed, therefore, with the utmost caution, and their indiscriminate use should be avoided.

* See Vol. I. *Concerning Fevers*, par. 295.; and Vol. II. par. 271. *in the note*. † See Vol. IV. *Of Diseases of the Chest*, par. 34. and l. c. Vol. I.; and Vol. II. par. 130.

141. The *bastard* pleurisy (110.) requires nearly the same remedies as those of the genuine complaint mentioned in par. 124. and those which follow. If, however, the latter do not terminate in resolution, it is apt to go on to an abscess, which, pointing outwards, frequently betrays itself by a soft swelling, and ought then to be opened for the speedy evacuation of the matter *. The *spurious* species, again, which may also be named

rheumatic (111.), must be treated like rheumatic affections, with one or two bleedings, with dry and bloody cupping-glasses, with emollient fomentations, with gentle cathartics, and, lastly, with diluents and mild diaphoretics. Moreover, the fixed pains, unaccompanied with fever, which affect scorbutic, venereal, and hypochondriacal patients, as they are the effects of another disease, are to be cured by removing the primary complaint. The physician must therefore treat them with antiscorbutic, antivenereal, antihypochondriacal, carminative, and laxative remedies. Sometimes the pain of the side, even when unaccompanied with fever, is so severe and fixed, that it cannot be removed, unless by applications (113.), particularly of cantharides, and by inducing an ulcer to be kept open for a length of time. Such a remedy has likewise been of service when the pain has been seated in the intercostal nerves, and appeared to be of the convulsive kind. But the convulsive pain requires emollient, antihysterical, and anodyne remedies. When the complaint arises from depraved digestion, bile or worms (111.), emetics, gentle cathartics, and anthelmintics, are chiefly to be employed. If it be occasioned by an intermitting fever, and recur periodically, after bleeding, and cleansing the *primæ viæ*, we must have recourse to the peruvian bark †. When it supervenes upon small-pox and measles (112.), it ought to be removed as quickly as possible, by

opening a vein, lest the consequence of delaying such a remedy be the patient's sudden death. The remaining secondary and symptomatic species of the complaint (112.), are to be treated as depending upon putrid, bilious, or gastric fever; on gout or rheumatism; on phthisis pulmonalis; on the miliary miasma; on catarrh; on a metastasis; on hydrothorax; on suppression of the milk or lochia; and other diseases. It may be proper here to observe, that unskilful and inattentive physicians, when they fall in with putrid and bilious pleurisies, which arise from a putrid colluvies of the *primæ viæ*, or are symptoms of bilious fevers, frequently consider and treat them as a primary disease, in consequence of which scarcely one patient is preserved. This happens particularly in certain epidemics, in which those who ascertain the nature of the disease draw blood sparingly and cautiously, or place more reliance upon emetics or cathartics, and thus preserve most of their patients.

* See our addition, or *Giunta alla osservaz.* xxviii. *della*, par. 2. *de' Sagg. di med. prat.* di Pier. Paolo Dallarmi.

† See also another, *Giunta al consulto* 3. par. iii. of the same work. Fayence edit.

CONCERNING IMPOSTHUME, EMPYEMA, SCIRRHUS, AND GANGRENE.

142. WHATEVER method of cure be employed, the violence of the disease is sometimes such, that it either quickly proves fatal, or passes into other

lingering complaints. Inflammation of the lungs or chest, therefore, when it does not terminate in resolution within *fourteen* or *twenty-two* days, and is not removed by expectoration, according to Hippocrates, goes on to *suppuration*. If the pus which is formed be not speedily expectorated, but accumulated within the lungs, as it were in a cyst, such an abscess is named a *vomica*, or imposthume *; in the same manner as a similar collection of pus, succeeding to tubercles of the lungs, or to the congestion, which is the consequence of a catarrhal affection, or to a wound, contusion, or spitting of blood, or is formed in any other viscus, is also named vomica. But if the pus pass from the lungs or pleura, into the cavity of the thorax, and occupy that empty space, the disease takes place which we name *empyema*: although the same name is applied to a collection of pus in the cavity of the thorax, from whencesoever derived, whether from the mediastinum, pericardium, or diaphragm, or from the liver or spleen itself, or from fluids effused into the cavity of the thorax, and there becoming putrid. Frid. Casimir Medicus † observed an empyema in consequence of the pericardium having suppurated and become corroded; and Morgagni ‡ mentions an instance of its having arisen from an effusion of pus, from an abscess of the liver, passing through the diaphragm into the thoracic cavity. I myself have seen the complaint occasioned by pus passing in

like manner from the spleen, after eroding the diaphragm, into the left cavity of the thorax. I ascertained the presence of the complaint by the swelling of the spleen, which had been affected with an inflammatory pain, suddenly disappearing, and by the difficult respiration which ensued, and the greater quantity of pus discharged from the opening, which had been formed in the left cavity of the chest, in consequence of the pleura having undergone suppuration.

* L. i. *De morb.* n. 24. † *Observ. med.* vol. ii. p. 648.

‡ *De sed. et caus. morb.* epist. 26. n. 24.

† Richa (*Consil. epid. Taurin. alter.*) describes pleurifies and peripneumonies, which succeeded to epidemic erysipelas, and readily passed on to imposthumes. In par. 61. he mentions the case of a nun, who spit up the follicle of an imposthume. He names those *verrucae folliculate* which are formed by the expansion of any pulmonary vesicle filled with pus. He is of opinion, that the vessels dispersed around the vesicle may pour blood into any of them, and there form a collection of pus. And in par. 63. he says, that pus is formed either by the blood or lymph, and that it varies according to the matter from whence it is formed. He likewise distinguishes true pus from that which is purulent.

‡ It likewise appears, from an observation of M. Thomsen, to be found in *Com. Lips.* vol. viii. P. iii. p. 404. that blood may be poured into the pericardium without any rupture.

143. It is a proof that suppuration is commencing (142.), if, while the excruciating pain ceases, the fever still continue; or if, without any manifest cause, it suffer an irregular exacerbation, being milder in the day-time, and more severe in the evening, sometimes accompanied with rigors and flushing of the cheeks; and,

lastly, if, in place of a pain in the part formerly affected, a sense of weight be felt there. It is farther proved, if the expectoration, which is thrown off sparingly from the beginning, be accompanied with a severe cough, at first saltish, and afterwards becoming sweeter; if the breath be fetid, and the difficulty of respiration continue. When the suppuration is completed, copious thin sweats break out upon the chest and neck; the cough, and the desire to cough, harass the patient without any remarkable expectoration; the eyes become hollow, and the nails adunque; the cheeks become flushed; the extremities of the fingers are unusually warm; the appetite is lost; a colliquative diarrhoea sometimes comes on, and pustules break out all over the body. But if the suppuration take place on one side only, the patient, when he turns upon the sound side, perceives a sense, as it were, of a weight above him; the side also in which the suppuration has taken place, is generally warmer than the other, and is frequently painful, and swelled externally. Moreover, the pus effused into the cavity of the thorax betrays itself by a fluctuation or noise, when the body is suddenly shaken or turned round, unless the whole cavity be completely filled; in which case no fluctuation or noise can be perceived. In that case, the greatest difficulty of breathing, and a slow fever, are perpetually present; the diaphragm is depressed, in consequence of which it raises the hypochondria and epigastrium with

a sense of weight, causing them to swell out so as to resemble abdominal obstructions or ascites*, as I myself have frequently observed; the feet, and likewise the face, swell; the urine deposits some white, fetid, or viscid sediment; a putrid taste is felt in the mouth, from which a similar breath proceeds; the body wastes, and the other phenomena of tabes take place. From the observations of distinguished authors † it appears, that the dyspnœa, which by some has been considered as an invariable symptom of empyema, is sometimes absent, and that the patient can lie with freedom on either side. Lastly, according to Avenbrugger, the thorax, in empyema, when struck in the lower and back part, sends out an obscure sound.

* Van Swieten, par. 302. 303. † Panaroli, Marchetti, Le Dran, Morgagni, and others. See *Giorn. med. Ven.* vol. ii, p. 350. ‡ p. 79.

144. Imposthumes generally burst upon the *twentieth* day from the first accession of the pain or weight, or from the first attack of the fever or rigor; sometimes on the *fortieth*, or even *sixtieth* day; as we learn from the *Coaccæ Prænotiones*. I myself have observed them break much later, that is, even *three months* after the commencement of the complaint, the patient afterwards completely recovering. The persons who recover are such as, immediately on the bursting of the vomica, are freed from the fever, and freely discharge a white pus, without smell, smooth, not

variegated, and well digested, and are not attacked with a diarrhœa. The contrary happens, when symptoms the opposite of these occur.

145. When an imposthume forms gradually, and without any manifest cause, or arises spontaneously, it sometimes lurks in the constitution, according to Tulpius, so as to betray itself by scarcely any marks. It is attended, however, first with a slight dry cough, and afterwards with a moist one. Afterwards the respiration becomes more uneasy, the breath fails, and the body wastes, although in the mean time what is expectorated manifests neither pus nor blood. Hoffman * affirms, that it is indicated by the following marks; a long continued, fixed pain, impeding the respiration, which is neither alleviated nor removed by bleeding, or other remedies, but holds on, accompanied with a dry cough, quick pulse, fetid breath, emaciation, loss of strength and appetite, and copious sweating. The size of the imposthume is inferred from the greater degree of dyspnœa, extreme anxiety, and hard pulse, sometimes intermitting in the erect posture. Unzer †, however, from extensive experience has shewn that the symptoms of *imposthume* are altogether ambiguous. But when one is about to break it is almost uniformly attended with rigors and fever.

* *Med. syst.* † *Promptuar. Hamburg.* vol. ix. p. 309. See *Comment. Lips.* vol. ii. P. iii. p. 480.

146. On an imposthume bursting, the patient

is either suddenly suffocated, in consequence of the quantity of pus pressing upon and obstructing the air-vessels of the lungs; or, if he escape this danger, shortly afterwards, the vital powers being intirely overcome, he sinks *, or is cut off by a slow consumption †. It appears, however, from the observation of eminent men, that by far more escape from that imposthume which succeeds to peripneumony or pleurisy, although a great quantity of pus be discharged at once, than when the pus is discharged from smaller abscesses ‡. Empyema has been seldom observed to be removed by absorption and metastasis; it very rarely opens a passage for itself through the corroded lungs, and is thus expectorated; more frequently it passes through the pleura and intercostal muscles, and is gradually discharged outwards.

* Van Swieten, § 1204. 1205. † Hippocrates, Meade, Van Swieten, &c. See Van Swieten, § 2106.

‡ See Dallarmi, *Sagg. di med. prat.* P. iii. p. 262, 263. Willis observed a particular species of vomiceæ, which are *callous* and continue to pour out pus for several years. † See Richa, § 62. *Constit. epid. Taurin.*

147. The presence of an imposthume being detected by the marks peculiar to it (142. 143. et seq.), its bursting by some is promoted by means of pectorals, lubricating and emollient remedies; by inhaling the vapour of vinegar or warm wine; by singing; by shaking the body, and mounting up stairs; by sternutatories; or even by vomiting. But the physician ought to be very careful in employing the three last re-

medies, and ought to weigh well the condition of the patient's strength and other symptoms. The evacuation of the matter, when it has once commenced, must be promoted by the remedies elsewhere proposed, in treating of *cough* (chap. I.), or *phthisis pulmonalis* (chap. III.). After the cavity of the imposthume has been well cleansed by means of vulnerary remedies, we must have recourse to vegetable diet, milk, and peruvian bark, to promote its healing *. Lime-water, also, when an imposthume discharges pus too long, and cannot be easily dried up, either taken alone, or mixed with water, is celebrated by authors of no small note. With the same view, tobacco is recommended by Ettmuller as a detergent and at the same time healing remedy †.

* See Dallarmi, *Sagg. di med. prat.* p. 2. osserv. xxvii. and those which follow.

† In Schroderi *Dilucid. Phytolog.*

148. In treating an *empyema*, we must quickly have recourse to the paracentesis, which has sometimes been attended with success *. It is performed in the back between the *ninth* and *tenth* ribs, five or six inches from the spine. The ancients performed this operation in the side, between the *sixth* and *seventh* ribs. It is likewise sometimes done in the part of the side where the swelling is. Hippocrates proposed perforating the *diaphysis*, or body of some of the ribs. A person

labouring under a suppuration from pleurisy had the side affected perforated, in consequence of which he completely recovered, and lived several years †. I myself have several times proved the success of this operation ‡. Sometimes, however, it has been of no avail. In the case of a patient labouring under a bilious pleurisy, which was often succeeded by *hydrothorax*, a surgeon, by having recourse to the operation of paracentesis, drew off a large quantity of serum, but next day the patient was cut off ||. That happens chiefly when the lungs are in a great measure corrupted and eaten through. Some object to the operation, because, as the pleura frequently adheres to the lungs, the latter may be wounded. In which case the side ought to be opened, not by puncture, but by incision; after which the lungs are to be gently put aside with the fingers, or the handle of the scalpel §. Willis has restored several patients by forming an issue where the breast is generally opened, and keeping it up for a length of time ¶. The ancients did the same by means of burning the part. The Egyptians, as Alpinus informs us, perform the burning as follows **. They wrap up a piece of cotton, in the form of a pyramid, in a piece of linen, and place its base on the part to be burnt. They then apply a light to its apex, and allow it to burn down, until the skin below becomes as much burnt as possible. Hippocrates has shewn what kind of pus, to prove serviceable, ought to be

discharged, in consequence of opening or burning the part. He observes: "Patients labouring under empyema, when their chest is burnt or opened, if a discharge of pus which is sparing and white take place, recover; but if it be bloody, dark-coloured, or fetid, they are carried off ††." In the mean time, antiseptics, and the mildest balsamics, must be given internally; while external applications, possessing a cleansing and healing property, are at the same time employed. Patients who have undergone suppuration of the *mediastinum* or *pericardium* (103.), are to be treated nearly in the same manner. For the pus collected under the sternum is drawn off by perforating it, or by means of a *pyulcum* ‡‡. How it ought to be drawn from the pericardium will be pointed out in the following chapter (191. 192.).

* Van Swieten, Ludwig, *Bayart de Jonquieres Thes. Paris*, an. 1762. Orteschi, *Giorn. di med.* c. ii. p. 350. † Guidetti, *Dissert.* ii. p. 187. ‡ Dallarmi, *Sagg. di med. prat.* where examples are adduced by Bursarius in the *additions*. || Guidetti, l. c. § 12. p. 187.

§ Werner cured an *empyema* by an *incision* made in the right side of the thorax. He fixed his scalpel between the *eleventh* and *twelfth* ribs, about four inches from the vertebrae, in such a manner as to perform the incision along the direction of the ribs, near the upper side of the eleventh rib, to avoid injuring the *intercostal artery*. Immediately on dividing the intercostal muscles, twenty ounces of pus were discharged. On introducing the finger within the cavity of the thorax, the lungs were no where found adhering to the pleura. Instantly upon the discharge having taken place, the symptoms were relieved, and the patient shortly afterwards recovered. See *Comment. Lips.* vol. iii. P. i. p. 45.

¶ *Pharm. rat.* sect. i. c. xi. p. 120.

** *De med. Ægypt.*

l. iii. c. 12. Orteschi, l. c. an. 1764. n. 44. p. 350.

†† *Aph.*

44. sect. vii.

‡‡ *Riolan. Enchirid. anat.* lib. iii. c. iv. p. 206.

[*Lourd also may be consulted, whose doctrine concerning the efficacy of the paracentesis is explained at the end of the following chapter, par. 191.—German Editor*].

149. When the inflammation, however (108.), is neither resolved, nor terminates in suppuration (142.), and does not immediately, or within a few days, extinguish life (99. 115. 116.); then either *scirrhus* or *gangrene* puts a period to the inflammation. When this happens, a lingering complaint is occasioned, particularly if the indurated part be not confined to a narrow space. A sense of weight is felt there; the respiration is difficult, particularly when the body is in motion; the patient can lie either on one side or on the back only, on account of being attacked with pain, cough, or oppression of the breathing. But if small scirrhus tumours, the consequence of inflammation, be spread over various parts of the lungs, in that case they are distinguished rather by a frequent, dry cough, aggravated by any motion of the body, or long speaking, than by the presence of other symptoms. Frequently, also, in these patients the pulse is small, irregular, and frequent. That affection is generally bad, which can be removed neither by gum, nor soap, nor hemlock, nor by other remedies, as the preparations of mercury*. If the other sequel take place, namely, *gangrene*, it proves fatal. This happens when a violent inflammation

at the beginning has either been neglected, or has been exasperated by calefacient remedies. When, therefore, gangrene commences, the pain, without any manifest cause, then disappears, in place of which a weight is felt in the chest, and the strength is greatly exhausted; the pulse becomes very small, weak, quick, and irregular; the face pale, wan, and sometimes of a mixed colour between red and blue; the extremities become cold; the expectoration is blue, black, and often fetid; the side which was affected with the pain becomes discoloured with a black or livid spot; the mind is affected; and shortly death closes the scene. Such a sequel, when threatened, can scarcely be prevented. We are not, however, to omit employing most of the antiseptics and cordials of which I have already made mention (137.).

* The reader ought here to call to mind the observations delivered by the author in par. 78. of the *Commentary on Inflammation*, par. 389. Vol. III. and elsewhere.

PARAPLEURITIS.

150. SOMETIMES the *bastard pleurisy* (110.)—which is a true inflammation affecting the pleura and external parts of the thorax—terminates neither in an *abscess*, nor in *gangrene*, nor in real *scirrhus*, nor is it altogether resolved; but most of the symptoms abating, the patient seems to be so far restored, that nothing remains but a pain,

which continues for a long time, and is more or less severe. In the mean time, however, he is distressed with this pain of the side, and can scarce recover his former strength. Soon afterwards, about the evening, he complains of an unusual and distressing degree of heat, which gradually passes into a slight continued fever, every day suffering an aggravation in the afternoon. It is named an *amphimerina*. At its height a discharge of sweat takes place, which very much reduces the strength. During the remission, however, which takes place in the morning, none flows, contrary to what happens in phthical patients.

151. Moreover, such as labour under this affection can scarcely lie on the side affected, and regulate their breathing in such a manner as to move and raise their breast as little as possible, that they may not too much aggravate the pain, which is increased by a full inspiration, while the intercostal muscles act so as to raise the ribs. It cannot, however, happen, that while the chest is so much compressed, the lungs not being sufficiently expanded become turgid, in consequence of the congestion of blood, requiring frequent sighing and yawning to be freed from the anxiety. They have no hoarseness; but, when they wish to speak for any length of time, they become fatigued and broken winded. The pulse, at whatever hour it is felt, is found to be quick and small. The blood, when drawn, coagulates

firmly, becomes indurated, and covered with the inflammatory crust. Such are the symptoms peculiar to, and almost invariably attending, this complaint.

152. To these symptoms (151.) are sometimes added, a dry cough ; or a thin scanty expectoration, sometimes streaked with blood, on account of the difficult transmission of fluids through the compressed lungs ; headach ; frequent yawning ; and, lastly, some emaciation, which, however, supervenes very slowly, and only when the disease has proceeded to such a length that a purulent and bloody expectoration begins to be thrown off more abundantly.

153. This affection of the breast has been named by Zeuianu, a physician of considerable celebrity of Verona, in a little work which he published on it in the year 1766, *parapleuritis*, which, however, as he himself remarks, more frequently consists merely in a pain of the side, left by the bastard pleurisy, at one time continued, at another time intermitting ; sometimes only felt on changes of the weather, or on violent motion of the body. Not unfrequently, after some space of time, it is resolved spontaneously, and ceases intirely ; sometimes, however, it distresses the patient for several months together, going through the course which I have already pointed out, until it induces fatal ulcers in the inside of the chest, or in the lungs themselves.

154. Let it not be supposed that this affection

is an incipient secondary *phthisis pulmonalis*. For Zeuianus contends, that it differs from that complaint, because in *phthisis* the pulse is generally weak and soft; because the sweat flows either at night, or after sleep, especially in the morning; because the patient lies more easily upon the side affected; because a thick and purulent expectoration is discharged; because the pain, if there be any, seems more obtuse, and more internally situate; and the emaciation proceeds with rapidity. While in parapleuritis the pulse is somewhat hard and stronger, and all the other symptoms (150. 151. 152.), as I have already shewn, are almost the opposite of these.

155. As it seems to proceed from the inflammatory gluten being collected and sticking in the side which had been affected with pleurisy, it is to be discussed chiefly by bleeding cautiously repeated. For the blood, when drawn, exhibits the buffy coat. Nor is there any danger of its reducing the strength more and more, as experience has shewn, that this remedy is borne well, and attended with advantage. Moreover, in order to completely eradicate the disease, attenuant, incisive, and resolving remedies, especially those which were recommended in the cure of pleurisy (133. 134.), must likewise be had recourse to. Sometimes also it will be necessary in an obstinate case to administer Venice soap, millepedes, gum-ammoniac, assafras-wood, burdock-root, that of smallage, bark, and mountain-reed; infusions of the leaves of the

absinthium Alpinum, carduus benedictus, and the like. For I have often employed these remedies with great success. Whether or not is that parapleuritis a species of incipient phthisis, which is removed, according to authors of note, by small, but repeated bleedings?

INFLAMMATION OF THE DIAPHRAGM.

156. I HAVE already observed (103.), that in pleurify the diaphragm is not unfrequently affected with inflammation. It is highly probable, however, that the diaphragm of itself becomes inflamed primarily. This is affirmed to be a rare occurrence. Huxham asserts, that such a disease is more frequently found than is commonly believed; while Lieutaud is of opinion, that it does not at all differ from pleurify. This much, at any rate, is certain, that particular symptoms are observed when the diaphragm is affected with inflammation, which differ very widely both from the genuine and spurious pleurify. Inflammation of the diaphragm, therefore, which some propose denominating *paraphrenitis*, is indicated by a very acute fever; by an excruciating pain about the false ribs, stretching to the loins and back, and surrounding them as it were with a girdle; by a dry cough, aggravating the pain; by the respiration being generally small and frequent, very seldom great and slow, sometimes by its being irregular and inordinate; by a redness of the cheeks, and a palpitation in the hypo-

chondres; by distension and pain of the same, and by their frequently being drawn upwards and inwards*; by sighing, or an effort to sigh; by a very quick, small, hard pulse; and, lastly, by tremors, subfultus tendinum, convulsions, the *risus sardonius*, panting, hiccup, and not unfrequently by delirium and madness. Boerhaave† is of opinion, that delirium is an invariable concomitant of inflammation of the diaphragm. But the observations of Morgagni and others oppose this opinion‡. Sarcone|| remarks very properly, that inflammation of the diaphragm is not invariably attended either with delirium, or the *risus sardonius*, or the other symptoms mentioned by Van Swieten and Boerhaave§. I also have observed the absence of these symptoms in real inflammation of the diaphragm¶. Morgagni, therefore, with reason concludes, that delirium is sometimes absent from it, while at other times it is found accompanying it**.

* The hypochondres are drawn inwards, both by the *diaphragm* being contracted and drawing in the false ribs, and also by the *peritoneum*, with which the lower part of the diaphragm, and the hypochondres themselves, are lined, being inflamed and attracted; which was the opinion of Riolan. *Enchir. anat.* l. 3. c. v.

† *Aph. de cog. & cur. morb.* § 909. ‡ *De sed. et caus. morb.* epist. vii. n. 14. || Part. i. p. 209. *Istor. ration. de mal. cc.* § In Boerhaav. *Aph.* § 909. ¶ *Diseases of the Head*, Vol. III. par. 214. et seq. ** L. c.

157. This dangerous and fatal malady must be immediately opposed by the most powerful reme-

lies. For the more violent the causes which have induced it are, and the acrimony of the blood which is combined with it is, the more imminent is the danger. Our expectations almost entirely rest on bleeding, clysters, fomentations, and antiphlogistic remedies *. But Huxham, notwithstanding that he drew nearly an hundred ounces of blood within four days, and employed many other remedies, was unable to save any one labouring under *inflammation of the diaphragm* †. So much does the violence of the complaint elude the utmost power of medicine!

* See Vol. III. *Of Diseases of the Head*, par. 215. et seq.

† *Epid.* vol. ii. p. 11.

CHAPTER V.

OF DROPSY OF THE CHEST, PERICARDIUM, AND LUNGS.

158. Too great an effusion of the serous and lymphatic fluid into any cavity of the body, and its being collected and stagnating there, is properly named *hydrops*. Hence, if a collection of the serous fluid take place in the cavities of the head, thorax, pericardium, abdomen, uterus, omentum *, or tunica vaginalis testium, hydrocephalus, hydrothorax, hydrops pericardii, ascites, and hydrocele, arise, concerning which I

have already spoken partly elsewhere †, and shall partly treat at present.

* Dropsy of the omentum sometimes occurs alone, unaccompanied with ascites. At first only a fluctuation is perceived in it, when its layers have become indurated by the pressure of the water. Portali, *Mem. de l'Acad. Roy.* an. 1770 & 1771, p. 541.—When, however, the omentum bursts, which happens also in consequence of emetics, ascites arises. *Id. ib.*—Likewise an instance of dropsy of the *peritonæum* is to be found in the *Act. Helvet.* vol. vi. p. 186.—Similar instances are to be found in Littri, (*Mem. de l'Acad. Roy.* vol. vii.), and in Chomel, *Ibid.* p. 107.

† See Vol. III. Chap. 2. *Of Hydrocephalus and Spina Bifida.*

159. There are certain progressive degrees towards dropsy, properly so called, which it is necessary to know, as they are sometimes confounded with dropsy itself. For if the vessels of any kind become turgid with serum, so as to render the whole body white, they occasion the disease named *leucophlegmatia*. Some refer this to the *cachexia*, others to *anasarca*. Cachexy consists in a bad habit and discoloration of the whole body. *Anasarca*, again, happens, according to some, if a viscid humour sticks not only in the vessels, especially the lymphatics, but is also diffused through the spaces of the cellular membrane, causing such a swelling of the body as does not so readily yield to the pressure of the finger, nor retain the impression long; although it is to be confessed, that all are not agreed concerning this. For Ludwig is of opinion, that in the *leucophlegmatia* the tumour is harder, and in *anasarca* softer; in which respect he meets with the concurrence of

Van Swieten *. For the latter mentions, that in the leucophlegmatia a more *phlegmatic* fluid, and in anasarca a thinner and more *watery* one, occasions the complaint; that in the leucophlegmatia, the whole body is more uniformly swelled, and soft like paste; while in *anasarca* the swelling begins from below, and gradually rises upwards.

* In Boerhaav. *Aphor.* § 72.

160. If most of the vessels, and spaces of the *cellular membrane*, in some particular part of the body, as in the feet, hands, head, face, eye-lids, cheeks, fauces, scrotum, &c. become swelled, and the swelling be soft, cold, white, and dimple on being pressed, it obtains the name of *oedema*, and is a kind of incipient dropsy. According, therefore, to the part which the serous collection occupies, various kinds of dropsy arise. Thus, if the whole body be affected, it is named *universal dropsy*; if only a part, *partial*.

161. Every dropsy has a twofold origin; namely, either from a faulty condition of the entire mass of blood, or from a bad constitution of the solids. It proceeds from the first cause, if the serous part of the blood much exceed the other parts, or separate from them, so as either to exude through the inorganic pores of the vessels, or to fill the lymphatics too much, or to pass through the exhalants into the minute cells and cavities of the body, and to accumulate there; or if its acrimony be such as to corrode the minute vessels, and pass from thence into

empty spaces. It proceeds from a bad organization of the solids, if the extreme vessels become so much relaxed as to admit too great a quantity of serous fluid, and pour more of it into the different cavities than the absorbents can take up; or if they be so overloaded and stretched, that being almost expanded into hydatids, they are at length lacerated, and pour out a part of their fluid.

162. The effused fluid will not be taken up by the absorbents, if it be thick and viscid; if their mouths, being obstructed or contracted, oppose its entrance; if they labour under atony, and therefore do not promote its propulsion; if any impediment be found on the greater veins and their trunks, such as obstruction, swelling, polypus, compression, great organic injuries, and the like, in consequence of which the return of the blood to the heart, and therefore the exoneration of the absorbents into the greater veins, may be retarded, or altogether checked. This, in fact, very frequently appears from the dissection of dead bodies, in which it has very often been discovered, that the cause of dropsy, particularly of the chest and pericardium, (concerning which we chiefly treat here), was some injury in the greater veins about the præcordia, preventing the free return of the fluids to the heart.

163. From these remarks (161. 162.) it is easily collected how manifold the remote causes

of dropsy may be; as intermitting fevers, and other chronic diseases; immoderate evacuations, especially of blood; a taint and obstruction of the liver, spleen, pancreas, and other abdominal viscera; suppression of the perspiration and urine; excessive drinking, especially of cold water when the body is warm*; repelled itch; asthma; various tumours, particularly indurated glands; aneurisms; varices; polypous concretions; a malconformation of the chest; and other things disturbing the free circulation of the blood, or its proper mixture and elaboration in the lungs and heart; especially inflammation of the lungs, scurvy, &c.

* Morgag. epist. xvi. and Hippocr. *Epidem.*

164. After these general remarks, we proceed to *hydrothorax*, or dropsy of the chest. It was named by Hippocrates *ὑδρορ*. The serous, or watery fluid, is contained in one or other, or in both cavities of the chest; or is included in some cyst or sac, when some of the cellular interstices behind the pleura, or about the lungs and pericardium, or in the mediastinum itself, are so expanded, and receive the watery fluid in such a manner, as to resemble bladders and sacs full of water. The first is named simply *hydrothorax*, or *hydrothorax non siccatus*; the latter *encysted dropsy*, or *saccatus*. They are both of them difficultly recognisable, but the encysted species much more so.

165. The symptoms of simple *hydrothorax*, ac-

according to Duverney, are as follows*: The greatest difficulty of breathing; the being capable of lying easily on the side affected, if only one side suffer, while it is almost impossible to lie upon the sound side; the respiration being less impeded when the neck is raised, or the body bent forwards; and, lastly, the facies hypocratica. To these symptoms some add, œdematous swellings of the feet; unquenchable thirst, or at least dryness of the fauces; extenuation of the superior extremities; the urine not corresponding with the quantity of ingesta, being generally scanty, red, thick, and turbid; panting in ascending an acclivity, or in lying down, or during sleep, which at night, in particular, is so much aggravated, that the patients are obliged to start out of bed, and go to the window to breathe the fresh air; a dry, slight cough, which especially accompanies the orthopnoea at night; a small, quick pulse; a sense of fluctuation in the breast, when the patient shifts his posture in bed, or is shaken; palpitation of the heart, and the like.

* *Mém. de l'Acad. des Scienc. edit. Ven. vol. vii. p. 151.*

166. It is to be remarked, however, that these symptoms scarcely occur, unless when the disease has advanced pretty far; and that, when they do appear, they are very ambiguous, as De Haën, after Morgagni, has shewn*; nay, that the respiration itself, at first, is not much affected, as Zimmerman also has remarked†. Feburi agrees

with De Haën, as, in a note on that passage of Zimmerman, he declares ‡, that sometimes hydrothorax is pointed out by no symptoms whatever, until the patient be brought to the point of death; and he is surpris'd, that in such a case no difficulty of breathing took place, unless a little before death. But although I am willing to allow, that, for various reasons, this may sometimes happen, it is frequently, however, a doubtful point, whether the hydrothorax existed previously, or superven'd a short time before death. Hence we must not always conclude, that those patients who are reported to have lain freely in any way, and to have enjoyed easy respiration, were really hydropic; but rather, that they only fell into the complaint towards the close of their existence, in consequence of which their chest, after death, has been found full of water.

* *Rat. med.* † *Trait. de l'exper.* vol. ii. p. 31. ‡ *Ibid.*

167. But Morgagni * is of opinion, that a small, low pulse, and a dry cough, or one which is nearly so, attended with a slight catarrhal expectoration, when they occur together, are not symptoms of hydrothorax, but rather of some other disease which may be combined with dropsy of the chest. Nor does he agree with those who consider the sudden interruption of the sleep, attended with a suffocating sensation, as a pathognomonic symptom †; for Helvich ‡, and De Haën ||, have proven, by instances addu-

ced, that it is often found with other symptoms of hydrothorax, and that it is also often absent; and subjoins, that this symptom is likewise common to other diseases of the chest, namely, of the lungs, heart, aorta, pericardium, and especially of spasmodic affections of these parts, and that, if it can be ever reckoned a pathognomonic symptom of hydrothorax, it is then only, according to Vicar, when it has preceded, not followed, œdematous swellings of the feet §.

* *De sed. et causis morb. epist.* xvi. n. 9. et seq. † Riverius, *Prax. med.* l. viii. c. v. Carol. Piso, *De morb. a feris. colluv. est.* *De hydrop. pector.* ‡ *Iphem. N. C.* cent. 10. obs. 32. || *Rat. med.* P. v. p. 44. and P. vi. p. 125. § *L. c.* n. xi.

168. Although, when only one cavity of the chest is filled with water, the patient cannot lie upon the sound side, as Duverney (165.) has observed, still it sometimes happens, that he can lie and breathe only upon the sound side. This seems to take place chiefly, when the side of the lungs which corresponds with the side free from water, has become morbidly affected, so as to be almost incapable of performing respiration, and when the lung in the side filled with water is sound, and almost alone performs its office. It is not surprising, therefore, if an hydropic patient lies more easily upon the side free from water, when the lung, floating in the water, is less pressed upon by its being collected principally towards the mediastinum, in consequence of which

it is more freely expanded for the inspiration of the air.

169. But if the collection take place in both sides of the chest, though more copiously in the one than in the other, what I have just pointed out by no means happens. For it is then more convenient, as it appears, to lie upon the side which is more affected, and fuller. Sometimes, too, there may be great difficulty of breathing, although the serum contained in the thorax be very sparing, provided it abound with salts, or be contaminated with any other kind of acrimony. For in that way the lungs are so vellated and stimulated, that the respiratory organs are thrown into spasmodic contractions, and the respiration is almost equally injured as when the lungs are compressed with a large collection of water.

170. But, though there be no real pathognomonic symptoms of hydrothorax, let it not be imagined, that the complaint can lurk in such a manner as not to admit of detection. For my own part I am of opinion, that we are to trust neither to one or two symptoms, but that we ought to cautiously weigh, first each of the symptoms individually, then all of them together, before pronouncing our judgment concerning the complaint. If, therefore, upon a careful examination at the beginning, many of the symptoms, which I have already pointed out as diagnostic

marks (165.), be found conjoined, why should the presence of the complaint be doubted? If, for instance, the causes of empyema have not been present, while those which are known to be capable of inducing hydrothorax, have been present; if the respiration be difficult, or become panting, or require being performed with the neck raised up; if it suddenly interrupt the sleep with a threatening of suffocation; if the difficulty of lying on one or other side become greater; if some fluctuation be perceived in the cavity of the chest, though far from the region of the heart; if œdematous swellings, especially of the lower extremities, or scrotum*; a cough, especially a dry one; thirst and scanty urine be conjoined; if the side affected exhibit an œdematous swelling externally, which sometimes happens†; or if the scapula and corresponding arm become swelled and torpid‡, which is a more frequent occurrence; there will be no reason to require more decided proofs of the presence of hydrothorax. But the diagnosis of the encysted dropsy (164.) is much more difficult, as Tonini || has observed it without thirst, scanty urine, œdematous swellings of the feet, or great difficulty of breathing.

* Riverius, *De hydrop. &c.* c. i. *Hist. Pratiſſ. morb.* 1699, 1700. Hoffmann, *De hydrop.* obs. vii. † Willis, *Pharm. rat.* c. xvii. p. 2. Pontan. . *anat. med.* 30. 38. Buechner, *Act. N. C.* vol. vi. obs. 30. Morgagni, l. c. l. 2. *De morb. thorac.* ‡ Morgagni, l. c. Carol. Pilo, l. c. || *Atti del Accad. de' Fisiocrit. de Siena*, vol. ii. p. 232. See an observation of Maloet's,

Mém. de l'Acad. Roy. de Paris, vol. vii. p. 171. *edit. Venet.* A soldier labouring under *encysted dropsy of the lungs* was affected with the greatest difficulty of breathing; a slow fever; swellings of the arms, hands, legs, and feet; turbid, yellow urine; a troublesome cough; incapability of lying down, for he was always obliged to sit; but no fluctuation was present.

171. Nor does the *hydrocardia*, or dropsy of the pericardium, more readily appear. It generally occurs when the fluid of the pericardium, with which the heart is lubricated, increases so much as to derange and impede the action of the heart. Sometimes, however, not an aqueous, but a purulent fluid, is discovered in the pericardium, which produces nearly the same effect. Hence two kinds of dropsy of the pericardium are noticed by Avenbrugger*, namely, a *watery* and a *purulent* species. According to him, the purulent differs from the watery species, because, in the former, the water puts on the appearance of turbid whey, and the matter, which is supposed to be purulent, adheres to the heart, like *fimbriæ*. Others, again, deny that this is a real purulent matter, as it has only the appearance of pus. Each species of the complaint, however, whether the dropsy be aqueous or purulent, betrays itself by the same marks. Barrere, in his *Anatomical Observations*, although he believes it to be difficult to distinguish between this disease and dropsy of the chest, mentions that it is accompanied with certain symptoms by which its presence may be certainly pointed out. Such are, a compression and sense of narrowness in the fore-

part of the chest, where the pericardium is situated ; the respiration being rendered more difficult, in consequence of the swelling of the pericardium ; a cough, for the most part dry and troublesome ; inordinate motion of the heart ; palpitation ; syncope, sometimes preceded by a sense of suffocation ; œdema of the feet ; paleness of the face ; a small, quick, and often irregular pulse ; difficulty of lying down, and a threatening of suffocation, occasionally recurring. But how little reliance is to be placed in these symptoms, will appear from the observations of Morgagni, shortly to be adduced.

* *Inventum novum ex percussione thoracis humani interni pectoris morbi detegendi. Vindob.*

172. To the symptoms mentioned by Barrere (171.), it seems proper to add, to make the diagnosis more complete, a particular sensation, as if the heart were immersed in water, of which, according to the best practitioners, the patients commonly complain *. The fact is confirmed by Senac †, who observes, that he had not met with a more certain symptom of hydrothorax, than a particular undulatory motion between the third, fourth, and fifth ribs, especially felt by the patient, or physician, on applying his hand when the heart moves and palpitates. Van Swieten remarks, that this undulation is much more obscure when the pericardium is intirely full. Such a palpitation, however, accompanied with a sense of undulation and fluctuation, was

neither remarked by Diemerbroeck ‡ in his patients, nor by Barrere, in five persons labouring under the complaint, whom he attended.

* This was observed by Hercules Saxonia, in a Venetian (*Med. pract.* l. ii. c. viii.); and by Raym. Jo. Fortis, in a person of sixty years of age. *Confil.* cent. ii. *confil.* 46. † *Du cœur.* lib. iv. c. v. tom. ii. p. 356. ‡ *Anatom.* l. ii. c. v.

173. I have already set down (171.), on the authority of Barrere, palpitation of the heart, among the symptoms of dropsy of the pericardium. But Morgagni * denies that it is an uniform symptom of this dropsy, affirming that, if ever it appeared, it took place when the fluid with which the pericardium abounds, proves hurtful from its acrimony, irritating and vellicating the heart, or when a polypus of the heart is conjoined with dropsy of the pericardium. Palpitation of the heart, therefore, as it is frequently absent from this complaint, cannot be a pathognomonic symptom of it. Moreover, when the watery fluid is not gradually, but suddenly effused within the pericardium, and distends it greatly, in consequence of its size it presses downwards upon the diaphragm, in such a manner, that its appendages being protruded and distracted, excite an excruciating pain in the loins. This pain, therefore, might seem to belong to dropsy of the pericardium: but neither does this pain uniformly accompany hydrocardia, as Morgagni has shewn, in a particular observation †.

Lastly, the same learned writer, having collected the observations of several physicians, concerning hydrocardia, and weighed them well, concludes, that neither fainting, nor cough, nor difficulty of breathing, are invariably found conjoined with it ‡. For frequently, while the patients are silent, or at rest, they lie with the utmost tranquillity in any posture, but especially with their head down, which has been taken notice of by Franc. Hyppolytus Albertini.

* *Epist. anat. med.* xvi. n. 23. † *Ibid.* n. 45. ‡ *Ibid.* n. 46.

174. The *thirst* also, which generally distresses hydropic patients, is for the most part absent in hydrocardia. But by its absence dropsy of the pericardium cannot be distinguished from hydrothorax, as, in this last, the thirst has sometimes been found to be wanting. Nor is the œdema of the feet so peculiar to hydrothorax, that, by this symptom, it can be certainly distinguished from hydrocardia. For although, in hydrocardia, the feet very seldom swell, this does not so rarely happen as the cough or thirst *. But the fluctuation, if it be perceived any where, as sometimes may happen, affords a symptom which is not to be overlooked. We must therefore guard, with the utmost diligence, against any fallacy, or mistaking the symptoms for those of empyema †.

* Morgagni, l. c. n. 46. † *Id.* l. c. n. 24. & 36.

175. Not a few writers of great reputation have persuaded themselves, that hydrocardia is indicated by emaciation, lowness of spirits, slow fever,

paleness of the face, languor of the eyes, and coldness of the extremities, and trust not a little to these marks: but these symptoms, for the most part, are observed to be common to other species of dropsy of the chest. Vieussens considers as a symptom of the greatest importance in this complaint, *a lead colour of the eye-lids and lips*, although it does not always follow dropsy of the pericardium, nor is it always separated from other diseases of the chest *. Morgagni also considers as doubtful symptoms of this dropsy, "the weight oppressing and constricting the heart, or the weight of the heart, and the anxiety of the præcordia," mentioned by Graetz, Albertini, Lancisi, Hoffman, Fantoni the father, Schreiber, and Fischer: first, because they are not noticed in the accurate observations of Vieussens, and by Olaus Borrichi are professedly excluded; and, next, because they were intirely wanting in those cases which he took from the history of Valsalva, or which he himself enumerated; and if ever they have been observed, as it may be found in the works of Gerbez, Bonet, Keller, Reiman, in that case not only dropsy of the chest, but other diseases also, from which these symptoms might have been derived, were present †.

* Morgagni, l. c. n. 47. † *Id. ib.*

176. As hydrocardia, therefore, is frequently conjoined with other diseases of the præcordia, it necessarily follows, that it can scarce be distinguished by any symptoms, in consequence of the marks

of each complaint, or sometimes of several being confused and opposed to each other, as Albertini * appropriately and candidly confesses, taught by the observations which he had made. Nevertheless, he adduces in point several remarks, confirmed by long and extensive practice, to establish the fact, which it will be attended with advantage to lay before the reader. "If," says he, "the dropsy of the pericardium be solitary, pure, and simple, it may at least in some measure be pointed out by the pulse being comparatively soft, rather frequent, and generally small †, such as is felt if the heart be flaccid and lax, and the fluid contained in the pericardium be viscid, sluggish, watery, and insipid. But if it be acrid and saline, in addition to the smallness and frequency of the pulse, a vibration and tension supervene. If, however, it be very abundant, and in some measure oppress the heart, then the pulse becomes small, quicker, and low. But it is not very intermitting and irregular, unless other morbid states of the præcordia be combined with the hydrocardia." He adds: "That there is either no cough, or a gentle and dry one, or one which throws off a lymphatic expectoration, which seems to be derived from the swelling of the pericardium compressing the lungs. Moreover, that the difficulty of lying down, and the necessity of frequently sitting up, scarcely ever happens in this disease, excepting in consequence of food or drink, emotions of the mind, or mo-

tion of the body, even when the patient only moves himself in bed. And although the motion of the heart be increased by any moderate change of place, or by walking, approaching to a sense of tremor, while at the same time a difficulty of breathing, or rather apnoea, and oppression of the sternum, are combined with a kind of pain and restlessness; that these symptoms, notwithstanding, are chiefly, if not intirely, allayed on the patient being composed to rest, providing the fluid of the pericardium be not so acrid as to constantly rouse the irritability of the heart, or to have corroded its surface." Lastly, he remarks, that nearly similar symptoms take place when the pericardium has become indurated any where, or loosely attached to the heart, as if by means of a membranous ligament.

* *Comment. Acad. Scient. Boron.* vol. i. p. 389.

† I myself have more than once had an opportunity of observing such a pulse in hydrocardia.

177. I must not omit to mention, that Daigman differs somewhat from Albertini; for he asserts, that patients labouring under this complaint cannot with ease continue for any length of time in the same situation, and therefore frequently shift it; which, it is probable, happens when the patient is not affected with the pure and simple complaint. The same author remarks, that they are more or less frequently seized with syncope, according to the diversity of their position in lying; in which respect Albertini agrees with him,

who had pointed out that symptom before, as having been frequently observed by him. If to these symptoms be added, the *undulation*, of which Senac has made mention, and the sensation which the patients experience, as if their heart were floating in water, he does not hesitate concerning the presence of hydrocardia.

178. Morgagni, who is distinguished both for the depth of his medical knowledge, and for his caution and circumspection in determining such points, affirms that many other things must be taken into consideration. That we may not therefore depart from his admonitions and cautions, if symptoms of other diseases of the chest, especially of hydrothorax, as a sense of fluctuation far removed from the seat of the heart, difficulty of breathing interrupting the sleep, uneasy lying on one or other side, or the patient being almost intirely incapable of doing it, be absent; if the œdematous swellings of the joints, cough, and thirst, be not present at all, or very slight; on the other hand, if a certain weight be felt at the region of the heart, and the heart itself be oppressed by the motion of the body, and seem as it were constricted, the breathing being in some measure interrupted; and if these symptoms, on the body being restored to rest, shortly cease, or be diminished, and the breathing be performed more easily when the patient lies with his head low; if, I say, all or several of these symptoms be conjoined, it is considered as probable, that

dropſy of the pericardium is preſent (l. c. n. 48.). And this will be rendered ſtill more probable, if the patient feel as if the heart were floating in water, or experience a ſenſation of water fluctuating in the pericardium, and not elſewhere. Nor are the ſymptoms adduced in par. 177. as well as thoſe which, if not always, are certainly ſometimes conjoined with hydrocardia, to be overlooked.

179. Beſides hydrothorax and hydrocardia, the lungs are liable to a ſimilar affection alſo. For when the ſerum or lymph ſtagnates in the cellular texture; by which the veſſels of the lungs are united together, dropſy, or œdema of the lungs, is occaſioned *. Sometimes ſome of the cells, or, according to others, ſome of the lymphatics, become ſo filled with aqueous fluid, and are ſo diſtended, as to exhibit cyſts, or hyſtids, of a pellucid colour, or full of variegated matter, by which the lungs are conſequently compressed. Each of theſe affections deranges the functions of reſpiration not a little.

* An œdema of the lungs, as appearing on diſſection, is recorded by Maloet, in the *Comment. l'Acad. des Scienc. Par.* an. 1732. p. 350.; as alſo by Barrere, *Obſerv. Anat.* p. 109. and by Tozzetti, *ſervaz.* p. 83.; by Luca Tozzi, and others.

180. The ſame cauſes as thoſe which induce other kinds of dropſy (161. 162. 163.) occaſion it, eſpecially, however, in children, who are more liable to this diſeaſe, errors in diet, ſuppreſſion of the itch, the meaſles and ſcarlet fever being imperfectly reſolved; and in adults, immo-

derate and hard riding, chlorosis, retiring of œdematous swellings of the feet, &c. Dropsy of the lungs may be suspected, if, immediately on all or some of the external parts of the body beginning to be affected with an œdematous swelling, likewise difficult breathing should supervene. For a small quantity of serum collected in the cells of the lungs impedes the respiration more than a greater quantity effused into the cavity of the thorax. Our suspicions will be more confirmed, if the face, without symptoms of hydrothorax and hydrocardia, become swelled; if the feet appear slightly œdematous; and if the pulse become in some measure suppressed; as we learn from the observations of Albertini and Simson. It is to be observed likewise, that a cough, and a certain difficulty of breathing, are sometimes present in this complaint*.

* To these symptoms it seems proper to add, such as we have noticed from Malcot, at the end of par. 170. after note ||, which may illustrate the diagnosis.

PROGNOSIS.

181. FROM a consideration of the causes, if these can be discovered, the prognosis is principally to be inferred. If an organic injury have given rise to the dropsy, it cannot at all be discussed, or at least with the utmost difficulty; and if by chance it be discussed, it undoubtedly returns. It is likewise incurable when it arises from the laceration of the lymphatics, or from the rupture

of any branch of the thoracic duct, or from that of hydatids. When it arises from the last cause, it attacks the patient suddenly, and frequently with a sense of water dropping, or of some rupture*. The more scanty the urine is, the less hopes of a recovery are there. Sometimes, however, the quantity of urine is a deceitful symptom, namely, when the other symptoms are not discussed, or when the respiration becomes shortly again oppressed. When the complaint proceeds from fever, or from immoderate evacuations, it is not esteemed to be equally dangerous as when it originates from no evident cause. Likewise the œdema which arises as if in consequence of a deposition of febrile matter, is not greatly to be apprehended, according to Sydenham†. The œdematous swellings and anasarca, for the most part take place from causes which are not so obstinate. Sometimes, however, they may be the effects of some internal morbid condition, deeply seated, which cannot be removed or overcome. The expectoration of blood, which supervenes in hydrothorax, most frequently is the forerunner of death; for it is the consequence of erosion, or great compression of the lungs, or of their vessels being in a great measure obstructed. With respect to the hydrocardia, it is not only full of danger, but of long continuance, and difficultly curable. On the other hand, the œdema of the lungs, if it be

quickly recognised, is more easily resolved by a diarrhœa, discharge of urine, and anacatharsis.

* Lower, Willis, and Tozzetti, relate similar cases.

† *Tract. de hydrop.*

THE CURE.

182. THE method of cure in dropsy is manifold; nor is the same mode of treatment applicable to every species of the complaint. Often that which removes one species, would be highly prejudicial in another. For it has been proven, as Becher also affirms*, that dropsies have sometimes been cured by means of aperients; diuretics; sudorifics; tonics; purgatives; emetics; hydragogues; cathartics; mercurial salivation; dry air, and exposure to the sun's rays; the dry and spirituous bath; dry meat, and abstinence from drink; copious drink; narcotics; incrassants; antiscorbutics; oily unctions and frictions; the bath; vapours; injections; emollient cataplasms; bleeding; paracentesis; scarifications; blisters, and other irritating remedies; the actual cautery; the inoculation of the itch; and, lastly, merely by the powers of nature. Upon the whole, however, in attempting the cure of dropsy, four indications present themselves; namely, to evacuate the excessive quantity of serous and lymphatic fluid; to remove the obstacles to the free circulation; to restore its due crasis to the blood; and, lastly, to strengthen the solids. Hence, in leucophlegmatia, anasarca, and œdematous swellings, it is

first necessary to purge the belly by some gentle medicine, as rhubarb; senna; Glauber's salts, or soluble tartar; crystals of tartar †; jalap; scammony; syrup of hartshorn; and manna; by means of which not only is the fordes of the *primæ viæ* evacuated, but likewise the serous colluvies powerfully drawn off. And these remedies must occasionally be repeated with caution, and in due quantity, until the swelling of the parts appears to intirely subside.

* *Recherch. sur l'hydrop.* p. 3.

† Menghin, in the *Com.*

Acad. Bonon. relates several histories of dropsies, which he clearly removed by the continued employment of crystals of tartar.

183. But if lentor and viscosity of the fluids be likewise conjoined with a serous colluvies, and if the viscera and vessels be interrupted by obstructions,—incisive, aperient, and gently diuretic remedies ought to be interposed among the cathartics. To this class belong chiefly, the lixivial salts of wormwood, of the stalks of beans, of the lesser centaury, and of genista; likewise the neutral salts, as vitriolated tartar, sal polychrest, sal ammoniac, nitre, the arcanum duplicatum, the terra foliata tartari; and, lastly, the ferulaceous gums, as gum-ammoniac, sagapenum, and galbanum; and the resinous gums, especially Venice turpentine; which last are principally serviceable when the languid power of the solids requires being excited by a gentle and aromatic stimulus. To these ought to be added, decoctions of the

five aperient roots, of madder, turmeric, eryngo, ononis, and Virginian snake-root, as well as that of our own country; contrayerva, pareira brava, saffrafras wood, juniper, mastich, and the like; the last of which, in particular, are admissible when the disease has originated from checked perspiration. But if repelled itch, or suppression of other cuticular diseases, have preceded, remedies prepared from antimony, sulphur, and vipers, are well adapted to the cure: likewise the inoculation or communication of the itch; blisters; issues; and so forth. And, in the last place, we ought not to omit antiscorbutic or antivenereal remedies, if the complaint be kept up by scurvy, or by a venereal taint. It is to be observed, however, that the employment of diuretics, by which anasarca has been removed, not unfrequently is in a short time succeeded by peripneumony, which quickly proves fatal, as we have often unexpectedly found to happen.

184. In the species of cachexy, or dropsy, which succeeds to excessive evacuations of blood, or any fluid, we must employ bitters, stomachics, and strengthening remedies. Of these the chief are, wormwood; white horehound; germanander; the eupatorium of Mesue; southernwood; orange-bark; that of cascarilla and cinchona; quassia-wood; from which decoctions, extracts, wines, tinctures, powders, electuaries, and pills, are prepared. In particular, chalybs, or steel, is celebrated; the employment of which, however,

Geoffroy suspects: These remedies, also, seem to be proper when the menstrual or hæmorrhoidal flux have stopped, and thus given rise to the complaint.

185. When the serous exceeds the other parts of the blood, or separates from the mixture of them, hydragogues and diuretics ought to be employed with the greatest caution, lest, by their dissolving property, what remains of the red blood should become more and more dissolved. Laxatives, and resolving and stimulant remedies, for the most part are reprobated by Casimir Medicus*. But when the pulse and blood are inflammatory, he advises the employment of bleeding, and mentions that antispasmodics are not to be disregarded †. In anasarca unaccompanied with fever, Baglivi proposes exciting sweat by the vapour-bath, and the steams of spirits of wine, or by bladders filled with an aromatic decoction applied to the body on both sides ‡. Casimir Medicus recommends the application of hot cinders, and frictions with oil and common salt, accompanied with the internal employment of crystals of tartar; for in this manner the serum is re-absorbed into the vessels, and carried to the urinary passages ||. Others order the application of blisters to the legs §, nor do they fear any bad consequence from the employment of them. I find them proposed in the anasarca which takes place in pregnant women ¶; because in them

diuretics are considered as being almost nugatory, if not hurtful; while cathartics, on account of the risk of inducing abortion, are dangerous; for, in consequence of the swelled state of the uterus, the veins are so compressed, that the return of the blood through them is retarded, or even prevented, in consequence of which, either an effusion of serum takes place into the adipose cells, or the due absorption from them (162.) is not performed **.

* *Com. Lipsf.* suppl. 2. to decad. p. 221. † *Id ib.* ‡ *Frax. med.* lib. i. c. 13. || *Observ. med.* vol. ii. p. 696. § *Targ. Tozzetti, Osservaz.* p. 83. ¶ *Com. Lipsf. De reb. in scient. nat. et med. gest.* vol. v. P. iv. p. 648.

** Certain remedies in anasarca, ascites, and leucophlegmatia, proposed by the author, are to be found in Vol. II. par. 92. & 149. which may be consulted.

186. Besides blisters for procuring an outlet to the serous humour, incisions also ought to be made in the skin. They ought to be formed upon the lower part of the tibia, two inches above the ankle, so as to penetrate to the cellular membrane, but not to reach beyond it. But inflammation, pain, and sometimes even gangrene, are frequently the consequence of such slight wounds. To prevent this accident, they ought to be fomented, as is generally recommended, with a decoction of emollient herbs, to which have been added spirits of wine and camphor; or if gangrene be rather apprehended, such a danger must be prevented by the employment of antiseptics and cordials. Fothergill * prefers scarifi-

evacuation, by means of a cupping-glass, to incisions, as being safer, and less liable to this inconvenience. I myself, long before Fothergill had proposed it, employed this remedy, and thus endeavoured to avoid the serious consequences which are occasioned by the incisions. But as every risk of inflammation and gangrene is not prevented by scarification, Lawrence devised another remedy, namely, a single incision near the ankle, small but deep, to prevent the too great discharge of fluids and sphacelus †. This evacuation also may be employed in the case of ascites ‡. For nature has frequently been observed to attempt it of her own accord ||. But after the serous colluvies has thus been drawn off, the flaccid and relaxed parts ought to be strengthened by bandages, that fresh fluid may not flow into them, as Van Swieten appropriately suggests.

* *Com. de reb. in scient. nat. et med. gest.* vol. xviii. p. 396.

† *Dissert. de hydrop.* p. 49. & 57.

‡ Meade, *Monit. et*

Præc. med. c. viii.

|| § 28.

§ It seems proper here to subjoin the method employed by Tissot, which we found among the author's papers. In the first place, he disapproves of the application of cantharides, which are recommended by others, as proving injurious in consequence of their acrimony. For the acrid humour flowing out irritates the skin, and inflames it. Hence the danger of gangrene. I find scarifications also liable to the same objection, especially in a habit with ill-conditioned fluids. He therefore applies to the legs the root of *bryony*, cut into small slips, and afterwards slightly pounded and heated, which, by the gentle irritation it affords, is capable of drawing off the serum. The first application brings off nothing, but after twelve hours it is renewed, until the duration of the flow appear certain.

Eph. var. arg. p. 144. 145.

187. Sometimes cathartics (182.), even of the more acrid kind, scarce at all excite the bowels. In that case the juice of the *iris palustris*, taken to the extent of eighty drops, in any syrup, every two hours, is said to have drawn off a great quantity of ferous fluid, and afterwards given in a smaller dose, to have restored the patient *. The inspissated juice of the berries of dwarf-elder, without producing acrimony and heat, is reported by several to have proved serviceable, by rousing all the excretions †. Anasarca, attended with difficult respiration, which at the same time indicated œdema of the lungs ‡, when succeeding to errors in the diet, or repelled itch, or excessive motion, and hard riding, or suppression of the menses, has frequently been cured by Albertini || by means of gentle hydragogues, diuretics, steel, viper-soup, and occasionally, which would appear strange to some, by bleeding itself. And with regard to bleeding, when plethora is suspected to be present, and the habit is otherwise good, it is frequently necessary at the beginning of the disease, especially in œdematous swellings of the feet, or recent anasarca. The safest of all kinds of bleeding is that which is obtained from the veins of the anus, by means of leeches.

* *Edinb. med. essays*, vol. v. p. 107.

† Tissot, *epist.* 138.

‡ *Com. æth. Scient. Bonon.* vol. i. l. c.;

|| Lieberkuehn forced

water collected in the cellular membrane of the lungs to descend,

py means of the pediluvium, through the cellular substance to the legs, and next employed strengthening remedies. Tissot, l. c. p. 146.

188. Likewise certain external remedies promote the cure. Gentle, long-continued, and gradually increased friction, has frequently proved serviceable. When the œdema does not depend upon an internal morbid state, but is rather kept up by laxity of the vessels and cellular membrane, resolving flours, heated in an oven, a sand bath, and the powders of discussing and strengthening herbs, ought to be applied warm. Likewise burdock-leaves, applied round the legs, draw out a great quantity of serum. But, according to Ludwig, this is perhaps more effectually done by the root of the raphanus rusticanus, bruised and applied to the soles of the feet. The legs also ought to be strengthened by means of strong linen cloth wrapped hard round, that the fluid may not find access to the tumour. It is proper, however, to guard against those things which powerfully discuss or repress swellings of the feet, if the œdematous swellings appear to be symptoms of dropsy of the chest, abdomen, or of any other internal affection. For the vitiated or abundant humour, when forced to the internal part, is followed with bad consequences. Hence Hamilton * was of opinion, that the œdematous swelling of the feet and hip-joints, which supervenes in fevers, ought to be opposed by the internal

employment of spirit of scurvy-grass. He administered twenty or thirty drops of this spirit in a proper vehicle, occasionally interposing purging of the belly. Lange† recommends salt of tartar to the extent of fifteen grains, and sometimes to a scruple, given every day in the morning, for a week, drinking over it an infusion of bruised juniper-berries. Van Swieten‡ has left us an useful caution, namely, that purgatives prove hurtful when the œdematous swelling supervenes upon intermitting fevers before they are removed; but that friction || proves serviceable, and wine prepared with biters and aromatics. In which respect Ludwig agrees with him §.

* *De febr. miliar.* c. ix.

† *Miscel. verit.* fasc. i. p. 68.

‡ § 753.

|| *Infl. clin.* § 96.

§ Tissot, in the

epistle quoted, p. 139. says, "That it is no new thing to rub ascitic patients with oil. The abdomen is rubbed for an hour, morning and evening, with the hand dipped in oil of olives, and a few days afterwards, in consequence of the patient making water profusely, the swelling subsides."

189. Many of the remedies enumerated above (182.) are proper likewise in hydrothorax and hydrocardia. In these complaints, however, diuretics are more extolled, among which a chief place is held by the pulvis asellorum, or the juice expressed from them; turpentine; balsam of Copaiva, or the peruvian balsam; spirit of sweet salt, or nitre; squill-root; the wine and oxymel of squills; the liquor of the terra foliata tartari; the volatile salt of amber; the milk of gum-ammoniac, and the like. It is proper to observe, however, that the squill-root, as it acts with a

certain caustic principle, frequently irritates the delicate structure of the lungs too much, and, as it were, inflames them. On which account Wagner endeavours to in some measure correct it by the addition of nitre, in the following manner:—Rec. *Rad. scill.* s. p. gr. iv. *ad* gr. x. *nitri purissimi* gr. viij. *ad* gr. x. *. It is likewise corrected, as Lange informs us †, by the flowers of cassia, mixed with nitre. Others, in order to blunt its poisonous and acrid nature, add to it the root of *vincetoxicum*; and this is done chiefly by Heister, Rahn, and Cattaneus ‡. The oxymel Colchicum is recommended by Störck for the cure of every species of dropsy, and particularly for hydrothorax and other serous diseases, and various cures are related. Of it not more than a drachm or two, or at most half an ounce a-day, is at intervals given. Scopulus || mentions, that by means of this oxymel he had cured an old woman of sixty-five years of age, who had fallen into a dropsy; but that he had employed it without success in two other hydropic cases. Among the diuretic remedies, Sydenham's medicated wine does not rank last. It is thus prepared:—Rec. *Ciner. genist.* lib. j. *Infund. frigid. in vini Rhenan.* lib. iv. *Add. fol. Absinth. vulgaris* m. j. *Deinde filtrat. liq. unc. iij. dentur bis vel ter in die horis medicis.* For by means of this remedy several hydropic patients are said to have been restored. It appears, however, to be better calculated for the removal of ascites.

* Regnaudot proposes a formula similar to that of Wagner against anasarca and other species of dropsy, which is thus composed:—Rec. Rad. scillæ recent. p. j. v. gr. scrup. iv. Salis de duob. part. iij. v. g. drach. iv. In mortario marmoreo subigantur rite simul, donec fiat massa æqualis. Ex hac f. pil. gr. xij. et sicari finantur. Dosis n. iv. bis in die. Superbibenda infus. plantar. aperient. cum vin. alb. q. s. Serum lactis cum antiscorbuticis interdum detur. *Hist. de la Soc. Roy. de med.* vol. ii. p. 226.

† *Miscel. verit.* fasc. i. p. 66. The dried fruit of the *laurus zeylanica* baccis calliculatis, lately brought to us, are named the *flowers of the cassia cinnamomea*.

‡ Tissot, in the epistle quoted, says, “ That squills are a great remedy in dropsy, when given in a dose so as to act on the kidneys (p. 114.). But they prove hurtful by weakening the stomach, which is afterwards strengthened by the employment of the bark. In the *second* place, they are an acrid remedy, and excite universal pains; nay, they even derange the nerves, which may be prevented by the addition of camphor. In the *third* place, they dissolve and dissipate the blood: when, therefore, the fluids are thin, they ought to be employed with caution. Hence frequently the bark ought to be immediately subjoined. They prove hurtful when there is an old scirrhus conjoined with a slight fever, for ulceration is apt to follow (135. 136.). Pure or crude squills are to be preferred. Two or three grains of squills, beat up with sugar, prove of the greatest service in hydrothorax. When heated they lose much of their strength; they must therefore be then given in a greater dose. The injury done to the stomach is prevented by the addition of aromatics. The vinegar of squills is an insufferable remedy. The wine is more powerful, but all do not bear it. The oxymel, in a proper dose, is inferior to no preparation, particularly when conjoined with nitre, or a neutral salt (137. 138.).

|| *Flora Carniol.* vol. i. p. 266.

190. Petrus Salius Diversus* speaks clearly concerning dropsy of the lungs and dropsy of the chest; and although the more violent cathartics are universally reprobated, he mentions that he has himself been very successful in evacuating the ferous humours by employing the elaterium and

juice of the roots of elder, perhaps of the dwarf species. He employed the former to the extent of four grains, and the latter to that of an ounce and a half. He advises them, however, to be repeated, because they cannot, by a single evacuation, draw off the whole matter. After drawing off the matter, he recommends inquiring into the cause of its generation, that if possible it may be removed. In general he proposes employing cauteries in the arms and thighs, to prevent a relapse of the disease †.

* *De affe&u. part. c. v.*

† *Ibid. p. 223.*

191. But it is better immediately to draw off the water, especially if it be recent, or collected in consequence of the bursting of hydatids, by means of the paracentesis *. In hydrothorax the puncture is commonly made between the ninth and tenth ribs, five or six inches from the spine. Hippocrates, as we formerly hinted, used to perforate the *diaphrysis*, or body itself, of some of the ribs, by means of a trepan. But Sharp, an expert English surgeon, is of opinion that it is better performed as formerly, between the sixth and seventh ribs, at an equal distance from the sternum and vertebræ, which place, I find, is likewise preferred by Olaus Acrelius †. But he relies little upon this operation, unless the source of the superabundant serum can be stopp'd up. But when there are hopes of a successful issue, he says that we ought to have speedy recourse to the operation. Moreland mentions the case of a pregnant wo-

man labouring under dropsy, from whom seven pounds of limpid water were extracted by an incision made between the sixth and seventh ribs. In consequence of this she fainted; but afterwards did well, and the wound closed within a month. She had a successful delivery at the proper period.

* Lourd (*Journ. de med. mens. Maii*, an. 1782. p. 408.) proposes paracentesis in hydrothorax, as an useful operation, and liable to no danger, providing it be performed in good time, and before any injury has been sustained by the lungs. He thinks that it ought rather to be performed by means of a trocar, than the instrument named in French *bislouri*, if it be introduced with such circumspection, that, immediately on entering the vacuum, and no farther resistance being perceived, it is immediately drawn out again. He confesses, indeed, that it becomes of no avail if the pleura adhere to the lungs; but he does not therefore suppose, that an incision is performed more advantageously, since it is not so easy, as they perhaps affirm, to separate the pleura from the lungs. He mentions its having been in this manner performed repeatedly with success in both sides of the chest. It is performed as follows: A puncture is made four inches under the inferior angle of the shoulder-blade, and five inches from the spine, which place corresponds with the space between the third and fourth false ribs, counting from below. The operation for *empyema* is also performed in the same place. Nor ought the syncope, which sometimes supervenes after the puncture, to deter the practitioner from the operation. Shortly afterwards it entirely ceases. *Ibid.* vol. xxvii. p. 303. This operation has been successfully performed by Hippocrates, Willis, Lower, Bourdelin, Bargerion, Morand, Duverney, Senac, and others.

+ *Com. de reb. in scient. nat. et med. gest.* vol. xv. p. 425.

‡ *Transact. Philos.* vol. lvi. p. 302. Martin prefers performing the operation of paracentesis by means of a lancet, rather than a trocar. *Com. Lips.* vol. xv. p. 31.

192. I could wish that the same operation were employed in hydrocardia as in hydrothorax. Riolan observes*: "In it (namely the

pericardium) a large collection of fluid takes place, which induces suffocation and overwhelms the heart. If that serum cannot be evacuated by means of hydragogues, may we not perforate the sternum at the distance of an inch from the *ensiform cartilage*, as the pericardium is annexed to that part for suspending the heart. A doubtful recovery is surely preferable to positive despair." After Riolan, nearly the same method of drawing off the water is recommended by Senac †; but he neither approves of the perforation of the sternum, nor of the part proposed. He causes a trocar to be introduced between the third and fourth ribs, near the sternum, so as to be passed obliquely towards the ensiform cartilage. In this manner the larger blood-vessels, and other parts which it would be dangerous to wound, are avoided. But whether this puncture has been ever attempted, and what issue it has had, I must confess that I am ignorant. It is to be wished, however, that it were attempted by a skilful and experienced surgeon, first upon the dead, and afterwards upon the living subject. Nor would any other method of cure be required in the *hydrocardia purulenta* which succeeds to suppuration of the pericardium or heart (171.) †.

* *Enchirid. anat.* lib. iii. c. iv. p. 206. † *Du coeur.* l. c.

193. In short, in whatever way the water be extracted by means of the paracentesis (191. 192.), the greatest quiet, and the sparest diet, ought to be enjoined for some days, that, in con-

sequence of the motion of the fluids being rendered as gentle as possible, the mouths of the vessels may be enabled to contract themselves the more easily. Strengthening remedies must then be employed, the use of which is likewise necessary when the dropsy has been discussed otherwise. Its proper crasis must next be restored to the blood, and tone to the solids (182.). Under this head come peruvian bark and orange peel; cascarilla; bland aromatics; wormwood; Rhenish, Burgundy, and red wine; and especially the preparations of iron, the action of which is to be promoted by riding in a carriage or on horseback, by friction, change of air, travelling, living in the country, hilarity of mind, and the like.

194. The food in general ought to be of a dry kind: hence roasted flesh ought to be given in preference to boiled. The bread ought to be toasted. Pot-herbs which promote a flow of urine ought not to be excluded, as asparagus, hops, fennel, parsley, parsnips, goats-beard, artichokes, turnips, onions, and leeks. The patient ought to abstain as much as possible from copious drinking; for I have known the most obstinate dropsies cured merely by such abstinence. Sometimes, however, it cannot be denied, that even copious drinking has been of wonderful service in cases in which too great density and lentor of the fluids have been present. Becher recommends copious * drinking, and his tonic

pills. If any wine be allowed, it ought to be medicated with the absinthium ponticum, or juniper-berries, or millepedes. To allay the thirst when it is most urgent, the mouth and fauces ought to be washed with vinegar and water. Acid cherries, four prunes, or slices of lemon or citron, sprinkled with sugar, ought to be kept in the mouth. The air ought to be pure, dry, and elastic. Bodily motion in simple anasarca and oedema, particularly when a sedentary life has occasioned the complaint, will be proper. But it is hurtful in dropsy of the chest or pericardium. A sea-voyage, however, can prove hurtful to no person, and is easily borne.

* Milman (*Animadv. de nat. hydrop. ejusque curatione*, Lond. & Vienn. an. 1779.) supports Becher's opinion concerning the use of copious drinking in dropsy, which he endeavours to prove to be conformable to the doctrine of Hippocrates. He excludes all kind of watery subtilty from the causes of dropsy, and contends that atony and obstruction are always the cause of the complaint. He doubts whether the flow of humours into the abdomen after the operation of paracentesis can be prevented by external compression, and is persuaded that its utility becomes more evident if any part of the water, which is afterwards gradually to be drawn off, be left in the cavity. Hence he approves of the method of extracting the water at intervals, and removes several objections. His method of cure is this: If the patient be not very weak, he endeavours to dispel the water by means of purgatives, given every other day, or twice a-week. He gives a powder composed of half a drachm of the root of jalap, and seven grains of calomel; in the intermediate days he gives a saline draught, composed as follows:—*Rec. Aq. menth. simplic. unc. j, aquæ puræ unc. B. Sal. tartar. gr. xv. Acet. destill. drachm. vj. vel quant. satis ad salis saturationem; aq. piperis Jamaicens. drach. j. Syrup. simplic. unc. j. M. f. haust.* To this mixture he added forty drops, or one drachm, of vinegar of squills, and it was repeated every six hours. Along with the cathar-

tics he gave a decoction of oats and weak broths. But purgatives do not always answer, in consequence of reducing the strength too much ; in which case he has recourse to diuretics. Laying aside the cathartics, he gives a saline draught with the vinegar of squills, and a great quantity of water, with a little diuretic salt, and frequently within the space of forty hours a copious discharge of urine takes place. The drink which he recommends consists of half an ounce of cream of tartar dissolved in two pounds of barley-water, to which has been added syrup *ad gratam dulcedinem*, and an ounce or two of brandy. He affirms, that given in this way, together with the saline draught, it shortly excites a flow of urine, which it does not otherwise do, until a long time. A decoction of Virginian snake-root is sufficiently well calculated for exciting the action of the bowels and kidneys.—Rec. Rad. Seneckæ unc. semis, aq. fefquilib. Decoq. ad lib. j. cola. Dentur iij. unc. bis vel ter in die. He recommends cathartics at the beginning, and diuretics in the course of the disease.

CHAPTER VI.

OF DIFFICULT RESPIRATION, AND PARTICULARLY OF ASTHMA.

195. The natural respiration is that which is performed readily and easily, almost intirely by the diaphragm and a motion of the thorax, which is scarcely observable ; while deranged or difficult respiration is that which in any measure swerves from this. It deviates from its natural state, either in slowness or frequency, or in greatness or smallness, or violence, or in the irregular order, number, velocity, and duration, both of the inspiration and expiration. Hence it is said to be deranged when it is too great or too small ; when it is too long or too short ; when it is too slow or

too quick ; when it is too frequent or the reverse ; when it is too violent or too languid ; as also when it is irregular, inordinate, interrupted, and the like.

196. But passing over these distinctions, which, for the most part, are either not diseases, or only symptoms of them, we shall treat of those injuries of the respiration which render it difficult, and which of themselves resemble a severe disease. This species of complaint is distinguished into four degrees, as it were, to each of which physicians have given a peculiar name. These are, *dyspnœa*, *asthma*, *orthopnœa*, and *apnœa*. It is named *dyspnœa*, when the respiration is only slightly injured. But when the respiration and expiration are more difficultly performed, according to the difference of the manner, and severity of the affection, it is named either *asthma* or *orthopnœa*. In it frequent respiration is conjoined with panting, a hissing sound, and a certain uneasiness at the chest ; but *asthma*, for the most part, ought to be recurrent and chronic. In it the respiration is so difficult, that the patient is not only obliged to sit, and with a great effort to breathe in the erect posture, but is also forced to draw his breath as if snoring. Lastly, if the breathing appear almost suppressed or overcome, while the sound of the voice is nearly intirely interrupted, accompanied with a small, irregular, slow pulse, anxiety, weight at the chest, and sometimes pain

there, the complaint is then named *apnœa* and *catarrhus suffocativus*.

197. In these affections (196.) some suppose that the inspiration only is affected, not the expiration ; and that they are, therefore, improperly referred to the respiration, which consists of both of them. But in my opinion they labour under a considerable error. For it more frequently happens, that the inspiration is injured, because, as will shortly appear, more causes occur which prove injurious to the inspiration than to the expiration. But it cannot be denied, that this last also, although much less frequently, is sometimes vitiated, or checked, as I shall shew hereafter. As, therefore, almost innumerable circumstances are required for the proper performance of the respiration, as appears from physiology, and as some are subservient to inspiration, and others to expiration, whenever any of them shall become deficient, the respiration also will necessarily be injured. The causes, therefore, of deranged respiration, must be very numerous ; but, to proceed in order, I will first begin with those which check the inspiration, and shall afterwards proceed to such as interrupt the expiration.

198. The inspiration is injured by the air being deficient, either in quantity or quality, or by its being vitiated by means of foreign or noxious vapours * ; by the larynx, trachea †, or bronchia becoming indurated, rigid, or spasmodically contracted, or obstructed, straitened, or compress-

ed, by means of mucus, lymph, pus, swelling, abscess, polypus †, calculi, lumbrici, and other foreign bodies; by the vesicles of the lungs being obstructed with dust, hairs, phlegm, blood, or other humours, or by means of stony concretions, scirrhus, tubercles, vomicæ, abscesses, œdema, or any other congestion, even bloody; by their being oppressed and loaded externally in consequence of hydrothorax, hydrocardia, empyema, emphysema ||, hydatids, tumours of the mediastinum and pleura, and dilatations of the heart and auricles, or of the aorta; by the pulmonary vessels being loaded with a glutinous humour, or with concrete or too viscid blood; by the intercostal muscles, and others which irritate and dilate the chest, being affected with paralysis or any other disease, or by their being inflamed and rendered immoveable; by the nerves going to them, being similarly affected; by the diaphragm in like manner being rendered paralytic; by the abdominal viscera being forced up against the septum transversum, or into the cavity of the thorax; by the stomach being distended with flatus, or the abdomen with water, obstructing the descent of the diaphragm; and, lastly, by air passing into the cavity of the thorax, and becoming expanded, or by any large tumour preventing the dilatation of the lungs §.

* The air, when it is deficient in quantity, or too rare, is incapable of filling the lungs and dilating the thorax. It may also

abound with noxious vapours in such a manner as to suddenly render the nerves paralytic, and thus induce a palsy of the muscles raising the thorax.

† See Vol. III. Chap. xvii. *Of Angina*, par. 375. 376. 423. et seq.

‡ Polypi, such as grow in the nostrils, frequently beset the aspera arteria and bronchia; or are sometimes even expelled by means of a violent cough. See Waren's observations in the *Lond. Med. Transf.* vol. i. p. 407.

|| Haller (*Opusc. Path.* obs. ix.) and others, throughout their works have observed, that lumbrici have formed a passage to themselves from the fauces into the larynx and aspera arteria. See Herbin, *Journ. de med.* Nov. 1778, p. 432. § Meckel, in particular, has observed difficult respiration, and at last death itself, occasioned by a collection of air in the right cavity of the thorax; *Mem. de l'Acad. des Scienc. de Berlin*, 1759, p. 42. Such was the quantity and expansion of the air, that the diaphragm was pressed down on the right side, and the liver protruded all the way to the intestinum cæcum. It appeared to him, that the air had passed from the lungs into the cavity of the thorax. The same author (*Ibid.* p. 44.) found a steatomatous tumour, weighing four pounds and three ounces, which adhered to the upper surface of the diaphragm, and had displaced the pleura, the lobes of the left lung, and the heart itself, towards the right side, pushing the stomach and spleen towards the umbilicus and ilium.

199. The expiration * is diminished or impeded by means of elastic air entering into the lungs, and overcoming their contractility; by too great laxity, sluggishness, and debility of the lungs; by a bony rigidity of the bronchia, on account of which they not only cannot be dilated, but cannot collapse and restore themselves; by a spasmodic and involuntary contraction of the intercostal muscles, and others which raise the thorax, being too long continued; by a spasm of the diaphragm, in like manner, being too long continued; by a paralysis or destruction of the sterno-

costal and other depressing muscles; by laxity, resolution, or cutting of the abdominal muscles, and similar causes. The expiration is likewise impeded by the diaphragm being drawn down, in consequence of the increased size of the liver or spleen, which is sometimes so great as to occupy not only the hypochondria, but also the hypogastrium.

* The external and internal intercostal muscles, which are twenty-two in number, elevate the ribs: but the diaphragm, while it contracts itself, is depressed. Thus the cavity of the thorax is dilated in breadth and length. But when a full inspiration is made, or attempted, the dilatation of the thorax is effected by the combined powers of the muscoli scaleni, sterno-mastoidei, by the posterior, superior, and anterior serrati and pectorales, as also by the cervicales descendentes, and probably by others inserted into the thorax, clavicles, and scapulae. By these muscles is inspiration performed. Expiration, again, is effected by means of the elasticity and weight of the ribs, by the retaining power of the bronchia and pulmonary vesicles, by the muscular fibres of the bronchia and aspera arteria, by the muscoli sterno-costales of Lieutaud, or the triangulares of others, by the abdominal muscles, and, lastly, in a violent effort, by means of the longissimus dorsi, sacro-lumbalis, and quadratus lumborum. See Haller, *Elem. phys.* vol. iii. lib. viii. sect. iv. § vi. to xi. likewise § xx. to xxiv.

200. Hence it is obvious, that difficult respiration is frequently the offspring of other diseases; and that asthma does not proceed merely from a sluggish and viscid matter obstructing the lungs, as was formerly supposed by some, but from almost innumerable other causes (198.); to which is to be referred the too slow motion of the blood from the heart into the arteries; of which kind are relaxation of the structure of the cavi-

ties of the heart ; rigidity, or a bony hardness of the valves at the mouth of the aorta ; the aorta itself being too small, or obstructed by means of a polypus, a tumour *, or other such impediments, either internal or external. For the blood remaining in the pulmonary vessels oppresses and overwhelms the vesicles of the lungs.

* Trombell, a surgeon of Bologna, living in the town of Lugo, in the district of Ferrara, from this cause, being seized within a few days with great difficulty of breathing, and an intermitting pulse, was carried off. He had long laboured under orthopnoea, slight fainting-fits, and irregularity of the pulse. His body was dissected by that excellent physician Brunori, who discovered at the mouth of the aorta a tumour as large as a pigeon's egg, occupying the membranes, and all the cavity of the artery. From it a few spoonfuls of pus were discharged. But the lungs were turgid with blood, and some effusion was present in the thorax, probably the cause of the excruciating pain of the chest, with which the patient was distressed before his death. [The history has been extracted from a letter sent by Brunori to Minardi, a physician of Fayence, found among the author's papers, which we have thought proper to insert in this place, *Germ. Edit.*].

201. Difficult respiration, therefore, according as it arises from morbid states of the lungs or thorax, or from injuries of other distant parts, is sometimes *idiopathic*, sometimes *sympathetic*, and, according to the diversity of its origin, at one time *primary*, at another *secondary*, and at other times *symptomatic*. But asthma in particular, on account of its cause, is distinguished into *humid* or *humoral*, and *dry*, or *convulsive*, *spasmodic*, and *flatulent*. Some also divide it into *sanguineous*, *pituitous*, *purulent*, and *scirrhus* ; nay, from the

manner of its duration, into *continued*, *fixed*, *periodical*, and *shifting*. The *dry* and *convulsive* species are in general, but improperly, considered as being one and the same. For any *convulsive* asthma may happen to be *dry*; but it does not follow that every dry asthma depends upon convulsion or spasm, if the causes enumerated in par. 198. 199. be called to memory.

202. The more remote causes which precede asthma, whether of the humid or dry kind, are plethora in the vigour of life; a serous or pituitous colluvies; abundance of mucus and rigidity of the fibres in old people; moist and cold air; metallic fumes; and those of sulphur and arsenic*; the humour of *arthritis*, gout and itch; the matter of small-pox, herpes and ulcers, transferred to the chest; suppression of the hemorrhoidal and menstrual flux; acidity of the *primæ viæ*, particularly in hypochondriacs and children; bad-conditioned fluids of any kind†; acrid *ingesta*, as poisonous mushrooms, hemlock, and other plants; preparations of lead; *hysteria* and *hypochondriasis*‡. Lastly, certain employments, as those of millers, stone-cutters, tobacco-nists, sieve-makers, grain-measurers, wool, flax, and cotton carders, and such like.

* The internal membrane of the bronchia is so sensible, that in consequence of the inhaling of acrid vapours, the breathing is immediately obstructed, the muscular fibres connecting the cartilaginous segments of the bronchia being spasmodically constricted.

Hence either a fatal peripneumony suddenly arises, or if the patient escape this, an asthma, which is almost incurable, and remains for the rest of life. Van Swieten, § 824. *Aer, humiditate, etc.*

† Baglivi has remarked, that most asthmas are connected with the stomach. *Append. de Asthmat.*

‡ In such patients asthma may be induced, in consequence of the stomach being distended with wind, or from a spasm of the diaphragm, either on account of its being forced upwards, so that it cannot descend, or on account of its being spasmodically drawn downwards, in such a manner that it cannot be relaxed and elevated, so as to perform the expiration. Felicius, *Del presag. medic.* p. 166.

THE DIAGNOSIS.

203. Difficult respiration (195.) appears of itself, and, from what has already been said, various degrees of it may be detected (196.). But the causes of the complaint for the most part lie hid, or are very obscure. When the practitioner, therefore, is called to such patients, he ought to inquire carefully, whether the complaint be constantly present, or return at intervals? Whether it be primary, or the symptom of another disease? Whether the nerves be affected so as to give grounds for suspecting the presence of paralysis, convulsion, or spasm? Whether the blood be morbid in quantity or quality? Whether there be present symptoms of hydrothorax, or hydrocardia, of empyema or any organic injury affecting the larynx, *aspera arteria*, lungs, heart, or great vessels in its neighbourhood? Lastly, whether the muscles of respiration be affected, or the thorax, by consent with other parts, and especially with the abdomen.

204. He must next inquire whether the asthma be moist or dry, or convulsive? The moist species is characterised by a moist cough, a hissing sound, and snoring, the discharge of some fluid being followed with relief. It is also sometimes aggravated, sometimes mitigated, according as the collection of fluid is either increased or diminished: but it never intermits, unless when the disease is completely resolved. In the *dry asthma*, either no cough is present, or there is one without any expectoration. In the *convulsive* and *spasmodic kind*, there are not wanting symptoms of a convulsive nature, and of the nerves being affected either at the beginning of them, or in the course of their distribution, as in the abdomen; no snoring, or at least no hissing sound of the matter, is perceived; there is no excretion of it, or if there be any, as that of thin, frequently voided, and watery urine, it is without relief. The complaint generally arises from some sudden cause, especially affecting the mind and nerves; and it likewise suddenly ceases, or at least abates, when it is least expected. Moreover, a sense of constriction is felt about the region of the diaphragm, as if it were close surrounded with a girdle; and the sleep, if it supervene, for the most part affords relief, while, on the contrary, the other species of asthma are not relieved. But a principal and not unfrequent symptom of the convulsive asthma is, that frequently the greatest smallness of the pulse is

discovered, from which symptom alone, I have not seldom detected the nature of the complaint.

205. The symptoms which may be in common to every species of asthma, are anxiety of the præcordia, a small, irregular, intermitting, slow pulse, palpitation of the heart, a red, livid, or pale colour of the face, an evening or nightly exacerbation, or an aggravation of the complaint on every motion of the body, an impediment in the speech, coldness of the extremities, starting out of bed, and flying to the open windows, violent * agitation of the scapulæ, shoulders, clavicles, and abdomen, stretching of the alæ of the nose, trembling, the dread of suffocation, and the like.

* From this agitation of the abdominal muscles, probably arises the pain of which patients labouring under a severe asthma frequently complain in the abdominal and epigastric region.

THE PROGNOSIS.

206. Every difficulty of breathing is attended with danger: which, however, is greater or less, according to the degree of violence of the complaint, and the variety of causes which may have given rise to it. The *orthopnæa* is generally attended with most danger. Asthma is generally obstinate and of frequent recurrence, and although it may sometimes appear from the beginning to be slight, it is for the most part the forerunner of hydrothorax, or of some other chronic complaint. It is scarcely ever cured in advanced

life, especially after having continued long; or it readily passes into the *catarrhus suffocativus*, and *apnœa*. The conversion of the *dry* into the *humid* complaint, accompanied with an easy expectoration of phlegm, is a favourable prognostic: while the reverse is indicated by this change happening with loss of strength, for it would then afford a proof of the approach of the *catarrhus suffocativus*, or that the passage of the blood through the lungs will be altogether interrupted. The *convulsive* or *spasmodic asthma* is a truly acute disease, and frequently resists the best remedies. But it seldom proves fatal, unless the brain or heart be at the same time severely injured. "Patients labouring under asthma, or cough, who become hunch-backed, are carried off before puberty*. Distortion of the spine, and difficulty of breathing, are relieved by a flow of blood†. Respiration, which cannot be performed but with the neck erect, occasions dry dropsy‡."

* Hippoc. *Aph.* 46. sect. vi.

† *Coac. Prænot.* 311.

‡ *Coac.* 424.

207. To this place may be referred this prognostic of Hippocrates: "Of those who are strangled, but not yet dead, such as foam at the mouth do not recover*." For so great appears to have been the force of the suffocation, that during the effort of respiring, all the mucus of the fauces and trachea, not being expressed and intimately mixed with the air, has passed into foam, while the vessels of the brain, being

either ruptured or enormously dilated, have deprived all the nerves, even those immediately subservient to life, of their action. The foam about the mouth will also afford a fatal symptom, when it denotes commencing putrefaction of the lungs, and the air extricating itself from them. Likewise the remark of Riverius is worthy of notice, when he observes, that some persons liable to strangury, on its disappearing are frequently attacked with asthma, and that on its return they are freed from the complaint †. Which may also be affirmed of gouty patients. For it very frequently happens, that they are attacked with the greatest difficulty of breathing, if they remain longer than usual free from gout; and that they do not recover until the gout returns to their feet or joints.

* Aph. xliii. sect. 2.

† *Prax. med. cap. De Asthmate.*

THE CURE.

208. THE cure must be accommodated to the causes. Passing over the species of difficult respiration, which are the symptoms of other diseases, and the alleviation of which is to be expected from the cure of these diseases, I shall proceed to those which require a peculiar treatment. If the air, therefore, have occasioned a difficulty of breathing, it ought to be corrected by artificial means, or a change of it ought to be enjoined. If poisons or noxious vapours occasion suspicion, the known acrimony ought to be obviated by remedies opposed to it, or the expulsion of them,

if it be practicable, attempted as quickly as possible. If the complaint depend upon a paralysis, or spasm, all the remedies proposed in chapter viii. Vol. III. concerning convulsive affections, will also be proper in this case. But particularly when it is the convulsive and spasmodic asthma, vegetable oil, employed after the manner of an alterative, proves of remarkable service, and likewise other things which are emollient and laxative, together with anodynes, as the liquor anodynus mineralis of Hoffman, Homberg's sedative salt, the succinated liquor of hartshorn, volatile salt of amber, camphor, musk, and opium. A cataplasm of onions boiled in oil of olives, applied externally, is said by some to contribute to relax the spasm of the intercostal muscles. Travelling and changing the air for that which is more salubrious, as Baglivi warmly recommends*, are especially proper in this place. In the dry or convulsive asthma perfumes and vapours are recommended by Louis †.

* *De morb. successione.* c. xii.
Chir. vol. v. ann. 1774. p. 549.

† *Mém. de l'Acad. Roy. de*

209. In the greatest difficulty of breathing, if it come on suddenly, or supervene in a subject not exhausted with age and disease, whatever its cause be, it is proper to let blood from a vein in the arm; and still more if plethora, flushing of the face, or the suppression of any evacuation, seem to require it. Nor ought the practitioner to be deterred from it by a small, obscure, and con-

tracted pulse, or by coldness of the extremities, if other symptoms do not contra-indicate it.

210. *Sordes* in the *primæ viæ*, when symptoms of it appear, and seem to keep up the disease, ought to be expelled by vomiting or purging. Vomiting also has the effect of powerfully shaking from the lungs whatever be adhering to them. Moreover, in the humid asthma, the expectoration of the thick and viscid phlegm is to be promoted by oily, incisive, and saponaceous remedies. In particular are recommended, betony, scabiosa, marshmallows, hyssop, elecampane, Florentine oris root; spermaceti; gum-ammoniac; Venice soap; lintseed oil; honey, oxymel, and vinegar of squills; syrup of tobacco, and hedge mustard; millepedes, the infusion of them, or the expression of them from white wine; volatile alkali; balsamic remedies, and those prepared with turpentine. Likewise the flowers of sulphur are here recommended. Fonseca * inclosed a scruple of the flowers of sulphur, and the like quantity of the *thus masculinum*, in the heart of a sweet apple, hollowed for the purpose. Afterwards he caused it, when closed up, to be roasted with the skin, upon hot cinders, and gave it thus prepared, and deprived of its skin, every other day, for eight or ten different times. He likewise prepared an electuary in the following manner:—*Rec. Sacchar. diamargariton. frigid. diapenidior. ana unc. j. flor. sulph. pulv. drach. iij. mel. despum. q. s. f.*

elect. molle. Dos. *drach. j. bis vel ter in die.* If the form of tablets be preferred, they may be prepared as follows:—Rec. *Sacchar. rosat. unc. j. flor. sulph. drach. j. M. f. s. a. tabellæ.* But if the fluid obstructing the lungs appear to be rather ferous and acrid, than thick and viscid, in that case, besides oleaginous remedies, mucilages, emulsions, decoctions of barley and hydrogala are preferred.

* *Consil. med. lviii.*

211. Squill-root is recommended, on account of its incisive, expectorant, and diuretic property*. Hesse employed it from three to twelve grains†. Likewise white horehound, in the case of viscid and sluggish fluids, proves powerfully incisive and solvent. Some prefer the juice of it, others the powder; some recommend the syrup, and others the conserve. But Lange‡ derived more advantage from the powder of the leaves. The tenderest extremities of the twigs are said to be better calculated for that purpose. The smoke of tobacco has been recommended from experience. It draws off the expectoration, and cleanses the lungs efficaciously. In place of it, however, with the same view may be substituted the *achillea montana*, which is said to have frequently been of great service||.

* See *Animadv. de scilla in advers. med. præ.* Ludwig, vol. ii, P. iv. c. 4. p. 695. † *Commerc. litt. Norimb. an. 1739. hebdom. 34.*

‡ *Miscel. verit. fasc. i. p. 57.* || *Mem. dell' Accad. di Parigi. Edit. Venet. vol. ix. p. 25.*

212. All acids stimulate the lungs, excite

coughing, prove incisive, and promote the expectoration. Sometimes, however, the vegetable acids, on account of the admixture of mucous parts, do not operate sufficiently, especially in old people whose sensibility has become blunted. Hence Farr, in the asthma and cough of such people, prefers the employment of fossil acids, both internally and externally *. But long before him, they were recommended by Floyer †, especially spirit of nitre, and water acidulated with the fumes of sulphur. Cantharides have acquired celebrity from long experience. When applied to the skin, as is well known, they not only excite blisters, from which a fluid is discharged, but they likewise introduce something into the blood, by which its lentor is attenuated. Hence some practitioners employ them repeatedly, and in different parts, that their power may be imparted to the blood. Klaumin, as he relates, by means of them, always restored phlegmatic and old people to their former health ‡. They are found to be principally efficacious, however, when a metastasis has given rise to the disease.

* *De acid. virib.* p. 123. † Meade, *De imper. sol. et lun.* p. 19. or 29. ‡ *Ephem. N. C.*; and Crantz, *Mat. med.*

213. When suffocation is threatened, besides bleeding, of which I have already spoken, it has frequently been of service to immerse the feet or hands, as it may be more convenient, in warm water; to employ frictions and cupping-

glasses on the limbs, and to inhale the vapour of warm water. On the complaint being overcome, the physician's care must be directed to prevent its recurrence. With this view, issues formed in the arms, thighs, or between the shoulders, are employed which are recommended by others besides Meade *. It is likewise necessary to correct the blood in various ways; with which view many things may be used, but especially whey and milk; the soups of frogs, snails, and vipers †; the juices of cooling and antiscorbutic herbs; the decoctions of the woods; the hot bath; the cold bath; riding on horseback, or in a carriage; passing into the pure air of the country. For the good effects said to arise from the exhalations sent forth by the earth broken by the plough, or from sulphureous pits, although they do not rest upon certain experiments, do not seem altogether to be despised. Such remedies, therefore, according to the diversity of the causes, may be employed to prevent the recurrence of the disease; to which, also, if a proper dietetic regimen be added, there will be the greater certainty of keeping off the complaint.

* *Monit. et precept. med. c. v.*

† See par. 142. in note Vol. III. for in that passage the use of viper-soup is defended by the author, at considerable length, against certain persons who had called its efficacy in question. [*Germ. Editor.*]

highest degree of apnœa. These, however, provided they be not completely dead, may sometimes be restored to life. It may not be amiss, therefore, to point out their proper treatment. Their body ought to be vigorously rubbed all over, and for a long time ; the veins of the arm or neck should be opened, in order that some ounces of blood may flow ; dry cupping-glasses are to be applied ; acrid clysters administered ; the smoke of tobacco *, or air, must be thrown in by the mouth (the nostrils being stoppt to prevent its return), and by the anus ; acrid substances must be put into the nostrils, and the mouth fomented with warm wine. In the case of hanged persons, the neck ought to be chafed with oil and warm wine ; but drowned persons require being fomented with a uniform and temperate heat. It has sometimes been attended with advantage to cover the whole body with hot ashes or sand. Nor must I omit mentioning the treatment of such persons as have undergone suffocation, or apparent death, in consequence of certain poisonous vapours or fumes, as those of charcoal, of common sewers, and other kinds of mephitic. They must be removed as quickly as possible into the open and cold air, with their head elevated, and their mouth opened wide ; they must be sprinkled with cold water, and the recovery attempted nearly in the same manner as in the case of persons whose animation has been suspended

by submerſion or ſtrangulation. Afterwards, according to circumſtances, other exciting, revellent, and evacuant remedies ought to be employed.

* I have lately learned from Pratolong an inſtance of a drowned perſon having been, by his advice, for the firſt time recovered, at Genoa, an. 1777, by the ſmoke of tobacco being thrown up his anus.

† Carminati, *De animal. ex mephit. et noxiis halitibus interitu.*

CHAPTER VII.

CONCERNING FAINTING.

215. When the vital and animal functions are impaired in ſuch a manner, that a perſon ſuddenly feels himſelf deprived of ſtrength, becomes pale and cold, while the pulſation of the artery ceases, and the patient appears like one about to die, or already dead, he is then ſaid to be in a ſtate of *ſyncope*. But as there are various degrees of this affection, it will not be improper to enumerate them. The ſlighteſt of all is that which is named ΕΛΚΥΣΙΣ, or loſs of ſtrength, from ΕΚΛΥΩ, *exſolvo*. This is followed by λειποθυμία *, or *animi deliquium*. *Syncope* is a ſtill more ſevere degree of the complaint: it is a Greek term, which has prevailed in medicine ever ſince the days of Galen, and ſignifies a ſudden and complete deprivation of the ſtrength, from ΚΟΠΩ,

scindo. Lastly, the most severe of them all is the syncope conjoined with *asphyxia* †, or cessation of the pulse all over the body. We shall speak, however, more particularly of *asphyxia* in the following chapter, as, in my opinion, it is not properly referred to fainting. For generally in *asphyxia*, sense, motion, and heat remain, which is by no means the case in the severe syncope.

* The synonyms are *lipothymia*, *lipopsychia*, and *apopsychia*, from *λειπω*, *derelinquo*, and *θυμος*, *animus*, or *ψυχη*, *anima*.

216. The proximate cause of the complaint appears to be impaired motion of the heart and blood, or its being more or less interrupted. For when the motion of the heart becomes languid or suspended, a languor or suspension of both the vital and animal functions takes place; in which I have mentioned the nature of fainting to consist. The predisposing causes are, sudden and violent emotions of mind; pungent odours; severe pains in some parts*; both violent spasm and paralysis of the heart †; compression, or irritation, of the nerves of the heart ‡; convulsions beginning in the brain, or elsewhere, and propagated to the heart itself; small bones in the falciform process, pressing upon, irritating, and puncturing the brain, of such kind, and placed in such a situation, as may convulse and benumb the nerves going to the heart, or which consent with it||; excessive evacuations of all kinds; poisons; malignant and pesti-

lential fevers; the warm bath; the sudden transition from a cool to a warm place, or from a warm to a cold one; plethora, both real and apparent; the return of the blood to the heart being impeded, or increased resistance to the propelling power of the heart; vitiated fluids; acrimony and other depraved states of the blood; irritation of the stomach, particularly of the pylorus; putrid, acid, alkalescent crudities in the *primæ viæ*; a bilious colluvies; worms of all kinds, particularly the round and tape worm; hysteria and hypochondriasis; and, lastly, a morbid structure, and vitiated states of the heart and neighbouring parts.

* Senac, *Du coeur*. l. iv.

† Morgag. *Epist. anat.* xxiv.

p. 13. ‡ *Id. ib.* n. 5.

|| *Id. ib.* n. 6. 7.

217. Among these a chief rank is assigned by Albertini and Morgagni to the dilatation of the vena cava and right auricle of the heart, especially if at the same time the beginning of the nerves, or the nerves of the heart, be affected idiopathically or sympathetically*; and the next to polypi of the right and left ventricle of the heart, especially when an effusion of serum into the cavities of the brain takes place at the same time†, or when the heart is ulcerated‡, in which case a pain likewise is for the most part felt in its region||; likewise to preternatural expansion and dilatation of the aorta and pulmonary artery. For in that case the heart requires a greater effort

to propel the blood through the arteries, as its propulsion is by no means supported by the systole of the arteries. But if at the same time the brain happen to be compressed with water, or in any other way, the languid action of the heart will necessarily the more readily yield to the resistance of the blood §.

* *Epist. anat. med.* xxv. n. 3. † *Id. ib.* n. 4. ‡ *Id. ib.* n. 17. 20. 21. 22. || *Id. ib.* n. 11.

§ Carcasson observed a *cancerous ulcer of the heart*, accompanied with *lipothymia* and *syncope*. The history of the case, as it is recorded in the *Hist. de la Soc. Roy. de Med. &c.* vol. ii. p. 252. is as follows. A girl of twenty-two years of age, labouring under lues venerea, was cured by the rubbing in of mercury. She was relieved of all her complaints. There only remained a kind of weight in the inside of the chest, opposite to the left breast, between the fifth and sixth true ribs; of which she complained before employing the mercury. For five or six months after completing the mercurial course she constantly complained of the same weight; but, in addition to it, a pungent pain at the same part, from the centre of the breast to the middle of the sternum of the same side, had come on. She compared this pain to the pricking of a needle. For a year afterwards she continued to be affected with a voracious appetite, accompanied with *lientery*. The pulse was small, frequent, and intermitting. During the severe pains it ceased for a few seconds. Frequent fits of *lipothymia* and *syncope* occurred. In the course of the complaint she could not sleep, unless in the erect posture, inclining somewhat backwards upon the left side, or upon the fore-part of the chest. The pain, which continued for two years, increased gradually. The attacks of *syncope* became more frequent; and she likewise complained more, especially towards the close of her life. A year before her death the morbid appetite was succeeded by loathing of food. On dissection an ulcer appeared, &c.

218 Nor, perhaps, is it far from the truth to suppose, that sometimes air evolved, and distending the cavities of the heart, is the reason why,

its systole being impeded, syncope follows, as was observed by Graetz *, according to Morgagni †. Likewise dropsey of the pericardium, or any connection of it with the heart, has sometimes been observed to impede the motion of the latter ‡; whether that takes place in consequence of its fibres becoming soft and enervated by the surrounding water, or because, in consequence of the compression and weight, the heart is so bound, that it cannot freely dilate itself. Whatever, in short, whether immediately or remotely, may check or repress the motion of the heart, will act as a remote cause. A fatal syncope is likewise suddenly induced by rupture of the heart. Ludwig || adduces an instance of the right auricle of the heart having been burst by an external blow, and occasioning sudden death. Likewise Langhans § has observed the left auricle of the heart burst by means of a polypus contained within it; and Dietericus Mummisenius ¶ of Hamburgh mentions its having become corrupted from the same cause.

* *Dissertat. de hydrop. pericard. in proem.*

† L. c. n. 13.

‡ *Id. ib.* n. 15. 16.

|| *Advers. med.* Par. i. p. 234.

§ *Id.*

Helvet. vol. ii.

¶ *Dissert. inaug. De corde rupto*, Lips. 1764.

DIAGNOSIS.

219. THE *eclysis*, or threatening of lipothymia, is preceded by confusion of the head, heaviness, and vertigo; by dimness of sight; by paleness of the face and lips; coldness of the extremities;

loss of strength ; sweat breaking out on the forehead and neck ; anxiety of the præcordia ; a small, weak, frequent, variable, and suddenly changeable pulse : all of which symptoms are aggravated upon the actual commencement of lipothymia. In *syncope*, however, there is a sudden and total loss of strength ; the respiration becomes obscure ; the pulse extremely small, or altogether suppressed ; the face turns pale and livid ; the whole body is bedewed with a cold sweat, and itself feels cold ; the patients neither see, hear, nor speak, but fall down ; their limbs become relaxed, as if by paralysis ; sometimes they are spasmodically convulsed ; the nostrils become sharp ; the eyes hollow and inverted ; the temples sink ; and, if the syncope attain its height, which some name *asphyxia*, the face likewise becomes greenish.

220. Besides, syncope differs from apoplexy by the pulse, respiration, and colour of the face, which in general in apoplexy are preserved, or are sometimes even increased ; while in syncope they are deficient. It likewise differs from epilepsy, because, in the latter, all the limbs are alternately convulsed, but do not become motionless, and the patient foams at the mouth. Lastly, it differs from the hysterical suffocation, because, in the latter, the respiration frequently seems to cease, though not the pulse, unless syncope happen to be conjoined with it. Lipothymia and syncope are subject to the same varieties as other complaints. Hence it is named *primary*, *second-*

ry, *symptomatic*, *hysterical*, *convulsive*, and *idiopathic*. That species which depends upon organic injuries of the heart itself, or neighbouring parts, has obtained the peculiar name of *syncope cardiaca*.

PROGNOSIS.

221. "Those who are frequently subject to severe fainting-fits, without any manifest cause, are suddenly cut off*." For they seem to labour under a polypus, or aneurism, or other organic injury, by which the motion of the heart and blood is at length completely interrupted. Frequently, also, the sudden bursting of the heart, or its vessels, and the rapid effusion of blood into the cavity of the pericardium or thorax, proves a cause of sudden death. "If convulsions and fainting supervene on the menstrual flux, it is a bad sign†." For convulsions proceeding from inanition, generally prove fatal; nor can the heart, when a sufficient quantity of blood is not present, renew its motion. But the diversity of the causes likewise occasions a diversity in the prognosis.

* Hippocr. aph. 41. sect. 2.

† Aph. 50. sect. 5.

THE CURE.

222. THE cure is twofold, either that adapted to the paroxysm, as it is called, or that which is employed out of it. In the paroxysm the motion of the blood and heart must immediately be excited. The face, therefore, ought to be instantly

sprinkled with cold water. For when the fibres are contracted with cold, the blood is propelled through the veins into the heart, and revives its motion. In this manner also is the nervous influence excited, so as to call into action the irritability of the heart. The same effect is produced by volatile remedies applied to the nose, as the spirit of balm, and Hungary water; the most acrid vinegar; volatile salts; spirit of sal ammoniac, urine, and hartshorn; and oil of amber. We must guard against hurting the patient, however, by strong odours, or sternutatories. For there are some persons who can by no means bear them, whether they be agreeable or otherwise, or who are thrown into convulsions by them, which, in the case of the hysterical or convulsive lipothymia, is attended with material injury. Vinegar and volatile salts are borne almost by every person. Likewise the most generous wine, spirit of balm, the *confectio alkermes*, and volatile salts, or various mixtures of these, may be employed with caution internally at proper intervals. But we must be guarded in our employment of cordials when the syncope has succeeded to an hemorrhage, for the liberal employment of them, by exciting the *vis vitæ* too much, would be apt to renew the hemorrhage.

223. If the complaint arise from malignant and poisonous causes, it must be opposed by means of alexipharmacs and antitodes, such as theriac, contrayerva, virginian snake-root, wine, peru-

vian bark, especially if the *lipothymia* or *syncope* be a symptom of a dangerous fever. Castor oil, camphor, and other antihysterical remedies are proper, if it proceed from the uterus ; but if from the stomach and intestines, those remedies are to be employed which remove or correct the cause. Violent pain requires sedative and anodyne means ; and plethora, polypus, aneurism, or terror, indicate bleeding. Nor ought friction, dry cupping-glasses, and acrid clysters to be omitted, when the complaint is of long standing ; and the other revellents are not superfluous, if it be suspected that the brain is primarily affected.

224. When the paroxysm is not present, the causes must be completely removed to prevent the recurrence of the complaint. In general, cordial, restorative, and volatile remedies are recommended, as exciting the blood and heart, repairing the fluids, or, if it be necessary, resolving them. To which object the regimen, with respect to the patient's living, ought to be intirely directed.

CHAPTER VIII.

OF ASPHYXIA,—AND TWO MORBID STATES OF THE PULSE, ALLIED TO IT.

225. *Asphyxia*, as I have already observed, is a cessation of the pulse, of such a nature, that the arteries no where throughout the body, at least

to the touch, appear to move. It is received in this sense by Galen, and others who have followed his footsteps*. But, as in severe syncope, the pulse is frequently observed to be absent, some, but especially such as derive the pulsation of the arteries from the systole of the heart, have conjoined asphyxia with syncope in such a manner as to hold it to be as it were the highest degree of that disease. It is not surprising, therefore, that Sauvages has comprehended *apparent deaths* under the single name of *asphyxia*, though he be opposed by the authority, particularly of Lancisi, who, in his book—*De subitaneis mortibus*,—names persons labouring under such a syncope, not *asphyctici*, but *pseudomortui*.

* Galen, l. i. *De præfag. ex pulsib.* c. ii. & l. i. *De differ. puls.* c. 3. Bonet. *Medicin. Septentrion.* T. i. l. ii. sect. xxi. c. 2. *et sepulchret.* T. i. l. 2. sect. ix. *Obs.* i. iv. vii. xlv. ex Bartholin *De lact. theor.* c. 14.

226. Sauvages is also opposed by Morgagni, who asserts that asphyxia is present when the pulse is so much diminished that it can no longer be felt; and adds, that the patients still retain their senses, speak, and move, and that they do not become perfectly cold; in which respect they most evidently differ from persons in a state of syncope, and apparent death*. He incontestibly proves this opinion concerning asphyxia, not so much by the observations inserted in the *Sepulchretum* of Bonet, or taken from the papers of Valsalva, as by several of his own, and not a few of others, collected from disse-

rent quarters. For he in the same place mentions † *asphyxiæ*, not to say of one or two days, but of much longer continuance, such as have been prolonged for upwards of forty days, or even for four months, without the respiration, power of speech, sensation, motion, strength, or heat being absent ‡. Moreover, in the *Adversaria* ||, he not only quotes from Ballonius §, an instance of an *asphyxia*, which continued for fourteen days before death, but likewise two cases from Riolan ¶, of persons who lived for sixteen years without any pulse; a similar case to which Ronsæus mentions having seen **. “For the patients retain the use of their internal and external senses sufficiently, they speak with ease, they turn themselves from side to side ††; some even raise themselves readily ‡‡; and, as our countryman Ramazzini has observed |||, a young Jew, whose pulsation all over the body had ceased for four days, was so robust and active, that on the very day of his death he rose out of bed, and dressed himself §§.” Hence he very properly concludes, “that asphyxia may exist without syncope, but that the latter cannot be without the former ¶¶.”

* *Ep. Anat. med.* xxiv. n. i. ix. † N. viii. ix.

‡ Haller's observations confirm the fact, vol. iii. *Oper. minor.* p. 306. Ramazzini. *Constit. Epid.* an. 1692. 93. 94. § 23. Schenck, vol. ii. Berryat, *Mém. de l'Acad. Roy. des scienc. de Paris*, an. 1748. p. 58. and *Com. Lips.* vol. ii. p. iv. p. 578.

|| Fernelius mentions an *asphyxia* of twenty-four hours having been cured, and it is confirmed by Ramazzini, *Constit. Epid.* § 33. Bartholin (*Cent.* iv. obs. 42.) mentions instances of persons having recovered after an *asphyxia* of six days.

§ *Advers.* II. animad. 44. ¶ *Epid.* II. ** *Enchir.*
Anat. l. v. c. 46. †† Morgagni, cit. epist. xxiv. †† *Ibid.*
 n. 2. ||| *Ibid.* n. 6. §§ L. c. n. 9. ¶¶ Epist.
 xxv. n. 1.

227. Such is the description of the real asphyxia. But there are other species of the complaint which with De Haën we name *spurious* *. Such are the *asphyxies* observed in one or other, or both arms; while in the mean time the other arteries, as those of the temple, the carotid, crural, and arteries elsewhere, beat as usual. But these partial asphyxies arise either from the arteries being uncommonly deep-seated, or from their being covered with too much fat; or from some variety in their distribution, or from unusual smallness; or from compression, or obstruction, or spasmodic constriction of the subclavian †, axillary, or humeral arteries. Among them ought to be ranked the asphyxia, which, towards the end of most diseases, supervenes in consequence of languor, and loss of all the powers of the system, particularly of those named *vital*. For it does not happen in this, as in the real asphyxia, that motion, speech, sense, the complexion and heat, are equally retained.

* *Rat. Med.* T. xii. c. 2. p. 42.

† Congestion, induration, and swelling of the lungs, compress the *subclavian* and other arteries.

228. As the origin of the *spurious asphyxia* is not very obscure, so the explanation of it does not seem difficult. This is not the case, how-

ever, of the *genuine asphyxiæ*. For little light has been thrown upon this complaint from anatomical dissection. It is probable, however, that the same causes which induce lipothymia and syncope (216. 217. 218.) here also have a place, but milder in degree. Among these, rigidity of the arteries seems to be a very probable cause, in consequence of which it happens, that they admit the blood, but cannot be distended, and contract themselves. And this can be affirmed more confidently of that species which is accompanied with a degree of languor of the whole body, as well as of the mind. But how will such causes apply properly to the long-continued asphyxia which constantly preserves the functions of the mind intire, and the action of the muscles vigorous? Why, on the motion of the arteries, the pulsation of which can be felt, ceasing, do not the other motions also, and the other functions, as in syncope, become quiescent? Probably in asphyxia the heart and great vessels around it still move in such a manner, that the circulation of the blood is continued through the lungs and brain. But in parts remote from the heart, heat and life cannot long remain, unless it be supposed, that in these also some motion, though a gentle one, of the fluids, still remains. While the motion of the heart and blood, therefore, in whatever manner, is kept up, does merely the systole of the arteries cease, through the fault of the nerves going to them? Many arguments, deri-

ved from the most accurate observations, seem to demonstrate, that the motion of the arteries does not proceed merely from the action of the heart *. But, leaving the discussion of a point involved in such difficulties, concerning which neither Morgagni nor De Haën could draw any certain conclusion, it is better to mention something of the causes, which anatomical dissection has discovered in the bodies of those who have died of asphyxia.

* This is demonstrated by the observations of Rhodius, Lancisi, Morgagni, De Haën, Zimmerman, Barthéz, and others.

229. De Haën says *, “ That on dissection of many who have died of asphyxia, the heart and auricles are found flaccid and dilated; that in others grumous blood is detected, and that sometimes many other injuries of the the vital viscera are discovered; that it is obvious that some of these morbid states give origin to asphyxia; but that the explanation of the fact is hitherto imperfect and uncertain, as the same causes have not been discovered in all subjects; as these causes have not given rise to asphyxia in others; as the causes, of whatever kind, already enumerated, have produced very different diseases; and, lastly, as the wonderful, but obscure doctrine concerning the nerves, has proven, that, without any vestige of vital diseases being discovered on dissection, these may be excited and perpetuated by the nerves alone.”

* *Rat. med.* vol. xii. p. 49.

230. From the anatomical researches of Morgagni we may certainly infer, that asphyxia sometimes arises, not so much from the pericardium adhering to the heart by membranous ligaments, as from the external membrane of the heart itself being indurated and thickened, preventing the heart from freely dilating itself*, especially when the pericardium at the same time abounds with water or pus; as also from polypi in the heart, or at the beginning of the aorta †; or from serum collected in the ventricles of the brain, and affecting the cerebellum; or from abscesses and other morbid states of the cerebellum, injuring the nerves going to the heart or arteries. Nor can we exclude from the causes of asphyxia, a colluvies in the *primæ viæ*, and hysterical and convulsive affections.

* *Epist. anat. med.* xxix. n. 3.

† *Ibid.* n. 7.

231. After asphyxia follow two other morbid states of the pulse, namely, extreme *smallness* of it, conjoined with *weakness*, and an occasional deficiency of it, which is named an intermitting pulse. And first, with regard to the former, it is either natural, and does not then portend any bad consequence; or it proceeds from disease*, as from extreme flaccidity and atony of the fibres of the heart †, from increased bulk of the heart, conjoined with extreme thinness and weakness of its sides,—in consequence of which it cannot

expel the blood with the requisite force,—or with water contained in the pericardium, either relaxing or compressing the heart. For the heart, when increased without these, occasions a great, vibrating, and violent pulse. But the water contained in the pericardium, if it be acrid, adds quickness, and sometimes hardness, to it.

* Morgagn. *epist.* xi. n. 13. *epist.* xxi. n. 49. et xxx. n. 15.

232. The entrance of the blood also into the arteries is diminished by the *semilunar valves* at the mouth of the aorta having become indurated, cartilaginous, or osseous. Hence the small weak pulse may be easily understood to be derived; which is moreover observed in those persons, in whose heart the *coronary vessels*, or arteries, proceeding from the aorta, have acquired a bony hardness *. Likewise sympathy propagated from the lower part of the abdomen †, from a putrid or acrid colluvies there, or from the uterus to the heart and its nerves; paralysis of these nerves; deficiency of the blood; too small capacity of the arteries; a languid systole; and diminished irritability, beget a weak and small pulse.

* Morgagn. *ibid.* n. 19. † *Id. ib.* n. 20.

233 Likewise a weak and small pulse will be occasioned by the pericardium being closely united with the heart. In consequence of which, as the heart can neither expand nor contract itself sufficiently, there is no wonder that the pulse becomes weak. Such was it observed by Peyer,

Lower, and Morgagni; but there ought to be present at the same time, either a deficient quantity of blood; or languid action of the heart; or great resistance of the arteries, as rigidity, hardness, and narrow diameter, or a spasmodic contraction; or such fulness that the arteries cannot contract themselves vigorously. Otherwise the pulse might be quick and violent, as Dionysius, Freind, and Lafay * mention it.

* Morgagn. epist. xxiv. n. 12.

234. I shall now proceed to say something concerning the *intermitting pulse*. An intermitting pulse may be considered as a *very short asphyxia*. For what else is *actual asphyxia* but an intermission of the pulse remaining for a great length of time? But intermission of the pulse rarely occurs by itself as a disease; it is frequently a symptom of other affections, to ascertain which, a pretty full discussion of its nature and causes will not a little contribute.

235. We say that the pulse intermits when the diastole of the arteries ceases at intervals, and cannot be felt. For, were the cessation of the pulse of long continuance, it would not be named *intermission of the pulse*, but *asphyxia*. The diastole of the arteries will cease at intervals, either if the heart occasionally do not transmit the blood into the arteries, or if the arteries do not receive it, or, though they do, not in that quantity which is requisite for their dilatation. The

heart will not transmit the blood into the arteries, unless it alternately contract and dilate itself, and unless the passages through which it receives and transmits the blood be sufficiently free. The alternate contraction and dilatation of the heart is interrupted, if the nervous influence, or influx of the blood, be defective, or if any obstacles be opposed to the heart which may prevent its moving itself outwards. It will not receive the blood, nor transmit it freely, if the due quantity be deficient, if the passages be obstructed or compressed, or if their structure recede in any way from the natural state, interrupting or deranging the circulation of the blood in various ways. If these act or take place by intervals, or occasionally only, the diastole of the arteries also will occasionally cease, that is, the pulse will intermit.

236. But although the heart be both well constructed, and its action properly performed, still the pulsation may intermit through the fault of the arteries; that is, if the mouths of them be too narrow; if their coats do not yield sufficiently to the impelling power; if they cannot readily contract; if the nervous power, or irritability in them, be either languid, or affect them spasmodically; if the aorta, at its beginning and arch, be so dilated, that the valves cannot shut, so that, when it is contracted, the blood is forced back into the left ventricle of the heart; in that case, an intermission of the pulse will take place, and the more readily according as the ven-

tricle of the heart is more dilated. The intermission of the pulse, from this cause, is synchronous with the diastole of the heart: while in other cases, it is synchronous with the systole of the heart *. For we consider it as being sufficiently ascertained, that the circulation of the blood through the arteries is not to be ascribed to the action of the heart alone.

* Instances of *dilatation* of the heart and *aorta*, attended with *intermission of the pulse*,—depending, as I imagine, on that cause,—are to be found in the Italian collection of Tozzetti, entitled, *Principia raccolta di osservazioni mediche*, p. 115. to 125.

237. The causes which in general induce *palpitation* (of which in the following chapter), *li-pothymia*, *syncope* (216. 217. 218.), and *true asphyxia* (228. et seq.), are supposed to be capable of occasioning *intermitting pulse*, but act less powerfully, and for a shorter time. But, according to practical observations, and anatomical dissection, the more frequent and certain causes of intermitting pulse, are morbid conditions of the tricuspid, mitral, and semilunar valves, such as rigid or bony hardness of them, especially conjoined with dilatation of the left ventricle, as Cowper and Vieussens discovered, or calculi or tumours formed in them, such as Horst and Bellini have seen; polypi both of the heart and adjoining vessels*; increased bulk or ulceration of the heart, as is recorded in the Sepulchretum Anatomicum of Bonet, although this last does not always occasion an intermitting pulse†; the peri-

cardium adhering to the heart or abounding with putrid fluid; the inner coat of the aorta being eroded, as Michellotte once observed in a nobleman of distinction (as will hereafter be shewn); passions of mind by which the nerves of the heart, or those which go to the arteries or muscles lying over them, are affected †; lesion, cutting, compression, or paralysis of the *par vagum*, or intercostal nerves, as has been shewn by the experiments of Valsalva and Molinel; the nerves of other parts being likewise irritated and punctured, as in excruciating pains and wounds; hypochondriacal, hysterical, and other nervous affections ||; wind distending the stomach; dyspepsia; worms; and other complaints of the viscera of the lower part of the belly, which, whether by compression or irritation, being propagated along the nerves, sometimes interrupt the motion of the heart or arteries; although the intermission of the pulse is generally then of short duration.

* Morgagni, l. c. n. 21. n. 22. † *Id. ib.* ‡ *Id. ib.* n. 20.

|| In a widow of thirty-nine years of age, tired of her condition, though of an excellent habit and temperament, but for several years so liable to rheumatism, that she was distressed with a particular sensation of cold, from the thigh to the foot of the right side, Zimmerman found the pulse small, weak, and slow, in the right arm, while in the left it was quick and strong. *De l'exper.* vol. ii. p. 23. The same thing generally takes place in paralytic limbs. Vogel, *Prax. med.*

238. Asphyxia, small and weak, or intermitting pulse, easily appear of themselves. The causes also, if all the preceding circumstances be

properly weighed, as well as the observations which have been delivered in other chapters, concerning the diseases of the præcordia and thorax, it will not be impossible to discover. Generally every defect, or languor, or intermission of the pulse, if they proceed from causes inherent in the heart itself, or neighbouring vessels, are of more importance, and attended with greater danger, than if they proceeded from another cause. Intermission of the pulse, if it proceed from the heart being immediately affected, may be distinguished by applying the hand to the heart. For if, at the same time when the pulsation ceases, the motion of the heart likewise cease, it may be certainly pronounced that the intermission of the pulse proceeds from the heart, as the diastole of the arteries is simultaneous with the systole of the heart. But if the motion of the heart be found to be regular, and by no means interrupted, it is a proof that the intermission of the pulse proceeds from the arteries being immediately affected.

239. But enough of these affections, as being frequently symptoms of other diseases, or considered as such by nosologists. For the greater or lesser danger attending them, or the evil they denote, depend upon the diversity of their origin; in the same manner as their cure *, which, for the most part, will rest upon that of the disease of which they are a symptom.

* A *long-continued, irregular pulse* has been cured by a small dose of opium given daily, as Morgagni relates in the *Epist. anat. med.* ix. n. 7.

CHAPTER IX.

OF PALPITATION OF THE HEART.

240. The action of the heart may not only be diminished, interrupted, and cease, but likewise increased to such a degree, that what is by no means observed by a person in health, while it is moving naturally, when increased, both becomes perceptible, and occasions some uneasiness. This happens when the heart beats with uncommon violence, striking the breast with unusual force, and pushing it outwards, so that even the hand, when applied, is frequently repelled. Nay, so great often is the motion of the heart then, that it not only becomes unpleasant to the patient's feeling, but is also rendered manifest, both to the sight and hearing of others, in consequence of the heaving and sound * of the ribs. This violent and vibrating concussion of the heart is termed *palpitation*, and by the Greeks *παλμος*.

* Torrest relates, that a young man, in consequence of a wound, was seized with such a palpitation of the heart, that the sound was heard through the window by the passengers going along the street.

241. The heart cannot push the chest outwards, unless it contract itself with unusual violence, or attempt to do so. The proximate cause of palpi-

tion, therefore, will be an unusually violent systole, or contraction of the heart. But the heart, in order that it may contract with unusual violence, must be irritated by some more acrid stimulus than nature can bear, or at least (which is likewise probable) the resistances to be overcome by it, while the power of contraction of the heart remains the same, ought to be diminished. For in both cases a more violent contraction of the heart follows, and its action is almost intirely exerted on the ribs. But several kinds of stimuli, calculated for that purpose, are either contained in the heart itself, or seem placed without it; or, what comes to the same thing, the remote causes of palpitation consist in those things which either irritate the heart, or afford a cause of irritation.

242. The causes inherent in the heart are especially those morbid conditions, which either attract too great a quantity of blood to it, as an aneurismatic dilatation, flaccidity and relaxation both of the heart and auricles*, and of the coronary arteries; or which distract and irritate its fibres, as inflammation, abscesses, tubercles, calculi, or small bones, formed any where in it; or which retard the egress or ingress of the blood into the heart, as varices and obstructions of the *coronary vein*; polypous concretions obstructing the *auricles*, *sinuses*, or *great vessels*; fleshy or stony bodies formed within; constriction, compression, or dilatation of the pulmonary artery, auricles, or sinuses; a cartilaginous or bony in-

duration of these parts ; the tricuspid, semilunar, or mitral valves having become indurated, rigid, or abounding with calculi or small bones, growing together, becoming too thin, or adhering,—for in that case they either do not permit the egress of the blood out of the heart, or they do not sufficiently prevent the regurgitation of that which has passed out ‡ ;—tumours, of whatever kind, growing to the base of the heart, or lying between the coats of the arteries going out of the heart ; swelling, ossification, abscess, or polypus ||, and similar morbid states of the heart itself. To which may be properly added, too great irritability and sensibility of the heart ; on account of which, in consequence of the slightest stimulus, its action is quickened in children, young people, and women of a delicate habit of body.

* When the right auricle of the heart is dilated, it admits too great a quantity of blood into the heart ; in consequence of which it is irritated, and palpitates.—*Morgagni*.

† A cartilaginous induration of the pulmonary artery, or its being beset internally and externally with *stony tubercles*, especially when joined with increased bulk of the heart, has been observed by *Morgagni* ; *epist.* xxiii. n. 10. 13. 14. *Riolan*, in his *Anthropologia*, has described the heart of a malefactor as having been in a cartilaginous state. A bone has been observed in the human heart by *Gemma*, like that which is said to have been extracted from the body of Pope Urban VIII. *Bartholini ad Fortunat. Licetum. cent.* i. *epist.* lxvi.

‡ *Morgagn. Epist. anat. med.* xxiii. n. 9. || *Id. epist.* ii. n. 15.

243. In whatsoever of these ways it happens that the blood remains in the heart, whether because it does not freely pass from the right or left cavities, or from the coronary veins ; or because it

is with difficulty admitted into them, especially into the left cavities, or because a more copious flow takes place, particularly into the right cavities; it will doubtless necessarily happen, that the irritability of the heart will be roused to more violent contraction, the degree of which will correspond with the irritability and mobility of the heart. Thus, for example, the auricles of the heart, when preternaturally dilated, either send too much blood into the cavity of the heart, or being distended with blood, compress the trunks of the pulmonary vessels and aorta in the neighbourhood, and, retarding the passage of blood from the heart, give rise to palpitation. Precisely in like manner tumours *, abundance of fat, or fleshy excrescences, growing at the base of the heart †, such as Garner has observed ‡, by compressing the trunks of the arteries, seem capable of inducing palpitation. Likewise, in consequence of a morbid state of the mitral valves, or in consequence of obstruction and compression of the left auricle, or pulmonary and coronary veins; the blood being retained in the right cavities of the heart, or its whole substance, will solicit it to more frequent and violent contractions.

* Tumours, which occupy the sides of the heart, do not induce palpitation, as appears from the observations of Albertini. Likewise the quality of the matter is to be considered. Albertini observed a bloody tumour unaccompanied with palpitation. *Com. inst. scient. Bonon. vol. i. in opusc.*

† Bartholin mentions, that other distinguished authors have observed similar phenomena. He observes: "In such persons as

have died suddenly, Riolan has found, at the beginning of the vena cava, fleshy substances, with a fatty mass; and, in a phthical patient, Worm observed some *carunculae* growing out from each ventricle of the heart, which the celebrated anatomist Bauhin likewise observed. I myself also formerly noticed the same thing at Padua. To say nothing of the priest affected with palpitation of the heart, mentioned by Schenck (lib. xxii. *Observat.*), at the base of whose heart there was an excrescence weighing six drachms."

† *Sepulchret.* sect. viii. obs. 23.

244. To the causes which exist out of the heart are referred, diminished capacity, and bony* or cartilaginous hardness of the aorta, especially conjoined with other morbid states of the præcordia, blood, brain, or nerves; aneurism or polypus of the same, and various kinds of tumours of its coats; a spasmodic constriction, induced by an acrid humour being deposited †, secreted, or exuding; ulceration of the inner coat ‡, as has been observed by Morgagni, Lancisi, and in a Venetian nobleman, by my townsman Michelotte §; acrid serum §, pus, and ichor, collected in the pericardium; a tumour, an abscess, especially at the base of the pericardium; the pericardium itself—although it sometimes occasions palpitation, sometimes not, as Morgagni observes ¶,—having become thick, hard, surrounded with fat, cartilaginous, bony, adhering close to the heart, at least when it compresses and nearly strangles the vessels passing out of the heart; the trunk of the aorta, immediately under its arch, being compressed by the left branch of the bronchia, which lies under it, being dilated by inspi-

ration, as Portali remarks ** ; likewise the pulmonary vessels being compressed by tubercles, vomicæ, hydatids, empyema, hydrothorax, or hydrocardia,—although this cause be not alone sufficient,—or in any way obstructed ; a narrow flat chest ; the spine of the back being distorted, or crooked ; thick, viscid, sluggish blood, in too great quantity, or morbid in point of motion and acrimony, as in cachexy, chlorosis, bad-conditioned fluids, acute diseases, repelled itch, herpes, gout, or arthritis, external ulcers dried up, lues venerea, scurvy, and customary evacuations suppressed ; hysterical and hypochondriacal affections, in which the heart is not unfrequently affected by consent and irritation either of the vessels, or cellular substance, or membranes, or nerves ; spasm of the diaphragm, particularly of its processes or appendages, between which the aorta descends, and may be constricted by them being convulsed ; depraved digestion in the *primæ viæ* ; worms †† ; flatus ‡‡ ; unusual exertions of body, or, on the other hand, an indolent luxurious life, emotions of mind, especially rage, joy, and terror ; and, lastly, the nerves, both in the brain and ganglia, and in the branches of the *par vagum*, going to the heart, being irritated or otherwise morbidly affected.

† From the observations of Verdris (*Eph. nat. cur. cent. vi. obs. 51.*) it appears, that enlargement, hardness and swelling of the heart, are frequently found conjoined with ossification of the aorta : likewise that the heart, the coronary vessels, and right auricle, are found enlarged, appears from the observations of Planc. Simple

enlargement of the right auricle, in consequence of which too great a quantity of blood is sent into the right ventricle, as Gratz mentions, was sufficient to induce *palpitation*. Palpitation, according to Cohausen, is conjoined with scirrhus of the heart and lungs, and with viscid and mucous blood, as also with too much blood, or that of a bad quality.

† Frequently an *acid fluid* is deposited there, if debility and relaxation attract it. It is likewise secreted; if it be true that an oily mucus distils from the coats of the arteries (as Lancisi and Gorter contend, and which Morgagni does not deny), for lubricating them. See Lancisi *De cord.* l. ii. prop. vi. Morgag. ep. xxiii. n. 5.

‡ Sometimes the *aorta* is so convulsed, that the thicker and rougher particles, which of themselves could not circulate, are driven towards the inner surface of the artery, stick there, produce ulceration, and a sense of acid and burning heat; which accounts for this sense of heat, of which patients frequently complain.

|| Namely, in Aloys Foscar, who, on that account, had been liable before his death to palpitation of the heart and aorta, and to an irregular and intermitting pulse. See *Comment. instit. scient. Bonon.* vol. i. p. 419.

§ Morgagni, epist. xvi. n. 23.

¶ Epist. xxiii. n. 23.

** *Mem. de l'Acad. Roy. des Scienc.* an. 1769.

†† Morgagni does not consider it as being a well-established fact, that worms have been found in the pericardium; and thinks that no conclusion can be drawn from the observations of Sylvius, Hartman, Ballonius, Haller, and Riolan. The Epist. already quoted, xxiii. art. xv. Likewise Epist. xxiv. n. 23. He is rather of opinion, that worms vellicating the cardia draw the heart into consent. Epist. xxiii. n. 15. Several notes upon c. x. par. 132. *Concerning the diseases of the lower belly*, appear to be in point.

‡‡ A discharge of wind from the stomach alleviates a palpitation. The stomach and intestines being distended with air press against the diaphragm and heart lying above them. The existence of air in the heart and pericardium, alleged by Morgagni, is not sufficiently demonstrated. *Ibid.*

THE DIAGNOSIS.

245. The symptoms which are almost peculiar to palpitation, are to be got from the observations already laid down in par. 240. It must be observed, moreover, that sometimes the motion of the heart, when the palpitation is uncommonly violent, by its force luxates and breaks the ribs themselves, a fact which Fernelius and Bellini attest; that the voice and respiration, when the complaint is uncommonly violent, are interrupted; that anxiety of the præcordia, vertigo, tinnitus aurium, trembling of the limbs, fainting, interruption of the sleep, and alarming dreams, frequently come on; and that the pulse, which, when the complaint is slighter, is scarcely quicker than usual, now becomes intermitting, or at least very irregular, small, and obscure. But some authors, as Bellini and Lieutaud, affirm, that every variety of the pulse may be conjoined with palpitation; or that the pulse is sometimes slow, at other times frequent, at other times quick, great, small, strong, weak, unequally irregular, intermitting, and so forth; according as the heart is contracted in one way rather than another, and the blood propelled into the arteries with various force, in different quantity, and with different quickness, or according as the capacity and resistance of the arteries oppose a greater or lesser obstacle to the free passage of the blood. For it may happen, that the heart may contract very frequently, and the pulsations of the arteries still

be few ; because, at every contraction of the heart, so much blood is not transmitted to the arteries as is required to fill and dilate them proportionably ; or because it is not received from the arteries in such a way that the vibrations of the arteries correspond with the motions of the heart.

246. Palpitation likewise differs in respect to its degree, manner, duration, and origin. Hence one is slight, another great, one uniform, another irregular ; it is continued or intermitting, and recurs at certain intervals or hours, or it is accidental ; or idiopathic ; or sympathetic ; or convulsive. Some likewise assert, that it differs from tremor of the heart. For as they suppose that the pulse corresponds with the motion of the heart, and know, that in palpitation of the heart it may be slow, they say *, that it is manifest that palpitation cannot consist in *tremor*, because tremor of the heart, that is to say, its frequent contraction, ought likewise to occasion a frequent pulse. But they seem to labour under an error, and among them Balloni is not consistent with himself. For he confesses, that sometimes palpitation is conjoined with a very quick motion of the heart, and that sometimes it is accompanied with a slow pulse (245). But does not a very quick motion of the heart convey the idea of tremor ? Why, therefore, may not tremor of the heart be referred to palpitation ? This seems in some measure to be hinted by Senac †

and Lieutaud ‡, of whom the one affirms, that palpitation, when it is slight, may be confounded with tremor of the heart, which is sufficiently manifested to consist in a certain languid state of the heart, by the weak, irregular pulse, loss of strength, fainting, and cold sweats, the forerunners of death. But, in palpitation, the action of the heart seems to be increased, while in the tremor which precedes death it is diminished; which, in fact, may be considered as forming no slight distinction between the complaints. It might be replied, however, that tremor is not always conjoined with languor of the vital powers, and that not unfrequently it is excited by a convulsive affection of the heart, which is a kind of increase of the irritability; and that, if ever it do succeed to deficiency of the strength, the defect of the strength is supplied by the celerity of the motion: that it is therefore not to be separated from palpitation.

* Bellini. † *Trait. du coeur.* ‡ *Hist. anat.*

247. In the same manner as the diagnosis of palpitation is easy, it were to be wished that the variety of the causes by which it is produced could be distinguished with equal precision. A retrospect alone of past circumstances seems to contribute most to attain a knowledge of their differences. If the palpitation depend upon plethora, upon viscid blood, and relaxation of the solids, or if it depend upon acrimonies, both the prece-

ding symptoms, and those conjoined with the complaint, will point out to us the presence of plethora, bad-conditioned fluids, cachexy, chlorosis, scurvy, lues venerea, and retention or repulsion of acrid things. If it proceed from imperfect chylication, from worms, from hysteria or hypochondriasis, from wind in the stomach, or from injuries of the brain or nerves,—the symptoms of each of these affections, which I have frequently pointed out, will be present. And indeed, in hysterical and hypochondriacal persons, there frequently occurs a particular constriction about the cardia, on account of which the food passes with difficulty into the stomach. This constriction generally arises from a spasm of the superior orifice of the stomach or of the œsophagus, which not unfrequently is propagated to the fauces; sometimes, however, it proceeds from a convulsion of the diaphragm, through which the œsophagus passes. Likewise a spasmodic pain passes to the back and shoulders, or even to the arms, such as is excited by aneurisms, although in this case no symptoms of such a morbid state be present.

248. The symptoms of the remaining causes, as those of hydrothorax, hydrocardia, and other diseases, to which the thorax and lungs are liable, have already been delivered elsewhere*. But the proper place for discussing polypous concretions, aneurisms, varices, and other organic injuries of the præcordia, will be in chapter X.

and XL Morbid thickness, or adhesion, or swelling of the pericardium, can scarcely be ascertained. Generally with these the motion of the heart is deranged, or symptoms of a varicose kind, of which we shall hereafter speak, are sometimes found; although there is always reason for the physician doubting, whether the deranged motion, or palpitation, proceed from an injury of the pericardium, or rather from a morbid state of some of those parts which are placed under and within it, and are not so much restrained by it in their motions, that these do not become sensible. Nay, sometimes along with these even the bulk of the heart has been found increased, by Albertini †. But morbid states of the pericardium are generally attended with symptoms common to morbid states of other parts; so that, in pronouncing his judgement, the physician becomes careful in proportion to his acquaintance with the appearances on dissection. Albertini, however, in morbid states of the pericardium, has sometimes observed that the pulse is more deranged, that fainting is more apt to supervene, and that a sense of weight and heat is perceived at the sternum ‡. Meckel || is of opinion that the following symptoms are sufficient to detect adhesion of the pericardium to the heart; namely, the pulse becoming irregular and increased, and sometimes intermitting, upon any motion of the body, at the beginning of the disease being frequently

strong, and towards its end always weak ; afterwards frequent palpitation of the heart ; anxious respiration ; the voice being frequently suddenly interrupted ; hemoptysis ; constant redness of the face ; remarkable anxiety, increased upon every expansion of the abdomen ; derangement of the internal senses ; emaciation and defective nutrition, while the cause cannot be supposed to exist in the abdominal viscera. And this opinion he endeavours to support, not only by physiological and pathological reasoning, but likewise by practical observations. In general, morbid states of the heart and neighbouring parts occasion a more obstinate and constant affection. We are not, however, entitled to conclude from its interruption and cessation, that the palpitation depends upon other causes. For it happens, that sometimes organic injuries for some time cease to act, but are apt to be revived by changes of the seasons, or by an error in the diet, or by exercise, or unusual motion of the body.

* Chapter V. of this volume, *Of Diseases of the Chest*.

† *Comment. instit. scient. Bonon.* vol. i. p. 384. ‡ L. c.

|| *Hist. de l'Acad. Roy. des Scienc. et Belles Lettres*, ann. 1755, Berlin, p. 76.

PROGNOSIS.

249. ON ascertaining the nature of the causes, it may be easily foreseen what the event will be. In acute diseases, if palpitation take place, with

symptoms of concoction, it generally promises the wished-for crisis: otherwise it portends, that the disease is becoming worse, and that the præcordia are oppressed. In plethoric patients, and young people, it frequently precedes epistaxis or hæmoptoe. When it proceeds from a slighter cause, which may easily be disaffected, or readily ceases of itself, as, for instance, from dyspepsia, emotions of mind, &c. it is void of danger. Nor is it very alarming if it arise from convulsive affections, as in hysterical and hypochondriacal people, or from dyscrasy, crudity, or plethora of the blood; providing it be assailed with the proper remedies. That palpitation which is occasioned by a metastasis, by the suppression of a customary evacuation, or by an hæmorrhage, causes more trouble. Lastly, that which arises from an organic injury, either admits of no cure, or a very difficult one, which is scarcely of any duration, and the degree of the danger will correspond with the nature of the organic injury. This is inferred likewise from the accompanying symptoms, namely, the difficult respiration, the œdematous swelling of the feet, the anxiety of the præcordia, and the weakness, or smallness, of the pulse. Generally it proves very distressing to those who have passed their fortieth year. Such persons seldom arrive at old age, being generally cut off by a sudden death. For being attacked either with an acute fever, or dropsy, or a

sudden fit of syncope, they are carried off*. In general, a palpitation which happens frequently is not to be slighted; especially if it succeed to mental affections of long standing, or take place after the resolution of certain diseases, accompanied with much nausea, and a vomiting of bile, and if the vomiting do not remove the nausea and palpitation, as is well known to persons labouring under black bile, and induration of the spleen.

* Nic. Piso, lib. ii. *De morb. cog. et cur.* p. 207.

THE CURE.

250. THE method of cure ought to vary according to the diversity of the causes. The *deutero-pathic*, or *symptomatic* palpitation, is cured by the remedies accommodated to the disease on which it depends. In general we must endeavour to facilitate the circulation of the blood through the præcordia; every kind of irritation, or irritating cause, ought to be removed and corrected; excessive sensibility or irritability must be allayed; and, lastly, the heart and neighbouring parts ought to be strengthened. By almost universal consent bleeding is recommended in the cure of palpitation, and indeed it is often necessary in patients labouring under it. But when the strength is reduced, or when the presence of dropy is suspected, or when the pulse has become enfeebled in consequence of hemorrhages and evacuations, it is with good reason

to be considered as pernicious. Nor is it of much service, although it sometimes alleviates the complaint, in the *idiopathic* species. But in the species of palpitation preceded by, or accompanied with, plethora, youth, a good habit of body, suppressed evacuations, excessive motion of body or mind, or terror, it is extremely beneficial to let blood from the arm, foot, or hemorrhoidal veins. Likewise when it proceeds from a *poly-pus* or *aneurism*, and the bad habit of body has not proceeded so far as to contra-indicate it, than it there is not a more efficacious remedy for preventing the more severe symptoms, and instant suffocation.

251. If indigestion, worms, obstruction of the abdominal viscera, or too great fulness of the stomach, have occasioned the complaint, gentle cathartics, clysters, anthelmintics, and aperients, are to be employed. It is likewise serviceable to purge the belly, in order to remove complaints of the head, if any such have arisen with the palpitation. Lentor, viscosity, and acrimony of the blood, require the juice of succory, dandelion, bugloss, hops, balm, brook-lime, nose-smart, or broths prepared with these plants; goat-whey, milk, medicated waters, both mineral warm baths, and acidulated or chalybeate waters. When repelled cutaneous diseases have given rise to palpitation, besides the diluents and correctives a little before mentioned, it is proper to employ crude anti-

mony, flowers of sulphur, decoctions of sarsaparilla, of bark, of rough bind-weed, soap-wort, viper soup, and the bath.

252. In hypochondriacal and hysterical patients, bitters and stomachics, as wormwood, germander, southernwood, cascarilla, quassia-wood, peruvian bark, rhubarb, the *elixir proprietatis* Paracelsi, and chalybeates, are employed; which last are likewise most proper when the structure of the heart and great vessels has become relaxed and enlarged. Nor must we omit cordial and analeptic remedies, if loss of strength, or too small a quantity of blood, have occasioned the disease. But, if nervous affections be the cause, anodynes and stimulants may be employed; particularly cooling powders, nitre, the *liquor anodynus mineralis* of Hoffman, succinated hartshorn, oil of amber, Homberg's sedative salt, camphor, castor, water of the flowers of oranges, of teitree, of peppermint, green nuts redistilled, musk, and opium, although this last be here reprobated by Lieutaud.

253. The manner of living ought to be accommodated to the indications. Over-fulness of the stomach, and a variety of dishes, ought to be avoided. The supper ought to be light. Wine should be either intirely forbidden, or corrected with chalybeate water. The patients also are to remain as quiet as possible, especially those who labour under any organic injury, or their motion ought to be very gentle, such as may neither

improve fatiguing, nor quicken the motion of the blood too much. But hypochondriacal and hysterical patients derive the greatest advantage from exercise and motion, provided they have recourse to them gradually. Study, venery, emotions of mind, rage, grief, and melancholy, are carefully to be avoided.

CHAPTER X.

CONCERNING POLYPUS OF THE HEART AND AORTA.

254. SINCE anatomy began to be cultivated with such ardour (from the commencement of the sixteenth century), dissectors have frequently found in the passages of the blood certain firm and tenacious concretions, resembling a piece of flesh, membrane, or lard, to which, on account of some resemblance between them and the polypi of the nose, they have given the name of *polypus* *; a disease which was either wholly unknown to the ancients, or of which the existence was barely conjectured †.

* Haller is of opinion that Vesali and Beniveni first discovered polypi on dissection; but Morgagni doubts whether they were actual polypi, or rather *excrescences*, as Marcellus Donatus and others have named them. Hence he ascribes the merit of the discovery to Helidæus Paduanus, who flourished about the beginning of the sixteenth century, and afterwards to Coyer, and Canan, an. 1574. to Ballonius, 1575. to Smeti, 1576. and to Erastus, 1580.

† Galen probably conjectured the existence of this disease, as he describes the complaint of Antipater under the name of *slight obstructions of the arteries*.

255. Polypi are frequently found in the greater spaces through which the blood passes, namely, in the cavities of the heart and trunk of the aorta, especially if they be preternaturally distended. The concretions found there (254.), vary in their nature and form. They generally consist of a number of concentric strata, or lamellæ, like the layers of an onion. Not unfrequently white points resembling vessels, if the lamellæ be red, or red points if they be white, are noticed in them. Others put on the appearance of a mucous and pituitous coagulum, or even of grumous blood, overspread with a white matter like jelly, or they resemble black blood, or some tenacious body composed of these, somewhat fibrous and membranous, and of different colours. They likewise almost all adhere to the sides of the vessels and sinuses, but not every where in the same manner. For sometimes they are at freedom in some part, and float, sending out processes into the neighbouring vessels, and in various ways interrupt the course of the blood. Sometimes they remain more firmly fixed in different situations. Lastly, they sometimes stretch as it were a new inner coat along the concave surface of the vessels, or are so perforated with small holes, or excavated, that the blood is allowed to pass through them.

256. The proximate cause of these concretions seems to be some diminution or cessation of the motion of the blood, in consequence of which its gelatinous and mucous, or, as they are called, fibrous parts, become coagulated. For it is well known that the blood, when it has lost its motion, becomes coagulated, and that that is principally owing to its concrescible and mucous part, with which the crassamentum, serum, and lymph, abound. Whatever, therefore, diminishes, retards, and restrains the motion of the blood, or increases its property of concreting, or weakens the strength of the solids, will occasion that stagnation upon which we have said polypous concretions depend. Fainting-fits, and, still more actual syncope, hold the first rank among the remote causes; while the second is held by sudden fear and violent terror. For if we duly weigh, how, in fainting, and sudden and violent fits of terror, the motion of the heart is suppressed or retarded, and how, during the repeated languid tremors of the heart, of its valves and vessels, it is shaken, it will at once appear evident, that polypous concretions will necessarily arise, as appears from the very clear experiments of Ruyfch and De Haën.

257. Moreover, while the circulation of the blood through the præcordia is opposed by constriction, induration, compression, or swelling of the pulmonary artery or aorta; by diseases of the lungs, as difficult respiration, asthma, perip-

neumony, pleurisy, phthisis, dropsy of the chest, and pericardium ; and likewise by long-continued spasm, or paralysis, of the muscles subservient to respiration ; and other impediments of this kind which check or retard the free motion of the blood, and prevent the auricles and sinuses of the heart from emptying themselves ; the formation of a polypus is favoured.

258. The following causes, by increasing the lentor of the blood, and its disposition to concrete, predispose to the production of a polypus ; namely, lues venerea, arthritis, and scurvy ; the repelling of scabies, and other cuticular complaints ; grief ; acids, especially of the mineral kingdom ; fermented spirits ; coagulating poisons, particularly preparations of lead ; poisonous vapours ; pestilential and contagious fevers ; crude, viscid, austere, and difficultly digestible aliments ; a cold season and climate ; or, on the other hand, excessive heat ; drinking of cold water ; plethora ; too great a quantity, or excessive density, of the serum and lymph ; a slender habit of body, which Hoffman accuses ; excessive, though usual evacuations ; and especially, according to Van Swieten, great loss of blood of any kind.

259. Those things, again, which impair the force of the solids, and predispose the blood to concrete any where, are, especially, want of motion ; a sluggish and indolent life, in which the body is in a state of languor, the elasticity of the fibres ceases, the circulation of the fluids becomes

fluggish, and their deliquidity is lost. Intense cares and studies act in a similar manner. Under this head chiefly falls an aneurismatic and varicose dilatation of the auricles and ventricles * of the heart, or of the vessels attached to them. The blood stagnates chiefly in those places in which the impelling force of the vessels is too small, or their capacity too great. Now, too great capacity, and too small an impelling power, without doubt, take place both in aneurismatic and varicose affections.

* In the body of our distinguished and much lamented ambassador, Firmian, the thorax was found much depressed, and the pericardium, which contained a small quantity of fluid, was so surrounded with fat (which was two inches thick), that it was compressed by it on all hands. Hence the heart appeared to be small and flaccid, and the auricles likewise small. The sides of the left ventricle were extremely thin and almost cartilaginous, those of the right somewhat less extenuated, but exceedingly flaccid. Within the cavity was found a large polypus, which with two branches entered the *cava* and pulmonary artery, and was externally grumous and black, but internally white, fibrous, and tenacious. It was supposed that the internal part had been of long standing, while the external was recent, and occasioned by death. For if the white, hard part had been a recent concretion, the part consisting of cruor above and below would have appeared the same, as Morgagni supposes, *pseudopolypi* being formed in dead bodies, both erect and supine. But it was internal, and resembled a *nucleus*, surrounded by a recent concretion, or *pseudopolypus*. It may, therefore, be fairly concluded, that the one was a recent, the other an old, concretion. But the extenuation and thinness of the sides of both ventricles, and the flaccidity of the right, seem to indicate, that the heart had been formerly *aneurismatic*; and that afterwards being confined to a narrow space by the pressure of the surrounding fat, it appeared to be of a small size. From which morbid states, the author, in his Italian Journal for 1782, explains the symptoms attending the disease, and the

patient's death itself. We have extracted these few remarks, lest, by transcribing the intire history of the disease, the full account of the dissection, and the corollaries deduced from them, we should be led too far from the subject. [*Note of German Editor.*]

260. Whenever, therefore, it happens, that the grumous blood—whether from fainting, or terror, or enlargement of the cavities through which the blood passes, or from inequality, constriction, or compression of them, or from any other cause in the heart, or neighbouring vessels—loses its motion, and remains fast there, a gradual accretion of some of it to the heart takes place, particularly of the fibrous part, and of the most concrescible, viscid portion of the serum, separating from the other parts, and, on account of the diminished motion, coagulating; and thus, in consequence of fresh particles being applied in a fibrous or reticular manner, and being united by mutual attraction, or entangled in the windings and villi of the heart, or tendons of the valves, solid polypi of various hardness, size, and colour, are formed: according as a greater or lesser adhesion, or length of time, or a greater or lesser addition of matter, or the red or white part of the blood, have concurred in their formation. That this is the fact, seems to be demonstrated by the very structure of polypi, which frequently inclose grumous blood as a nucleus, and completely resemble a congeries of pellicles applied to each other, such as Mal-

pighi observed upon an intimate examination of their composition.

261. Nor am I disposed to alter my opinion by the arguments adduced against the formation of polypi in living animals by Kerckring, Lieutaud, Pasta, Fantoni, Ruysch, Swenck, and others, who are of opinion, that polypous concretions of every kind, which are found in the heart and great vessels of dead bodies, adhering to its sides, valves, and *columnæ carneæ*, are formed of the concrescible part of the blood at death, or at least immediately after it. For although I do not deny that they are frequently formed at a person's death, or shortly after, in consequence of the blood stagnating, cooling, and becoming coagulated; still there are irrefragable arguments by which we are compelled to believe that polypi are likewise formed in a person during life, and continue for a length of time.

262. And, first, to reply to the objections of such as oppose this opinion, I may observe, that Kerckring did not deny every kind of formation of polypi, but only that which is derived from all the parts of the blood, not such as arises from the white and concrescible parts; which he has done so feebly, according to Morgagni *, that Malpighi found no difficulty in making a much more powerful defence of their formation †. Nor is the cause adduced by Lieutaud less feeble ‡, as he denies that polypi, such as break out in the nose, that is, fungous, fleshy excrescences, were ever discovered by him in

dead bodies, of which he mentions having dissected a vast number ; for I do not here speak of the fleshy and fungous tumours growing in the heart or vessels, as appears from what I have already said,—although fleshy excrescences, or sarcomata, which he had observed, have been seen by Vesali and Beniveni, according to Marcellus Donatus, and, lastly, by Wiseman, in a girl of sixteen years of age,—but concerning these concretions which are formed by coagulated blood, or by its concrescible part. Moreover, the objections of Pasta apply rather to those who believe that all polypi discovered in dead bodies had long existed in them when living, or to those who have overlooked, or not sufficiently investigated, other causes to which the disease, and even the patient's death, might with more reason have been ascribed, or who, trusting to doubtful and fallacious symptoms, and such as are in common to other affections, have rashly and improperly taken the existence of *polypi* for granted.

* *Epist. anat. med.* xxiv. n. 27.

† *Oper. Posthum.*

‡ *Preis de Médecine*, liv. I. cap. *De la syncope*, p. 275.

263. Which objections are so far from staggering me, that, on impartially considering every particular, they seem to be perfectly consistent with reason. It does not, however, follow from them, that we should conclude the formation of polypi in living animals to be neither true nor possible. For we observe, in the first place, that *aneurisms*, which at first were attended with a great pulsation, fre-

quently in progress of time gradually lose all pulsation; and that this, as all agree *, happens because the cavity of an aneurism, in consequence of the blood slowly concreting, and a polypous crust being gradually formed, is lined as it were with a new coat; which has been frequently demonstrated upon an aneurism of the arm or poples being either accidentally or intentionally opened. For, on the aneurismatic sac being opened, immediately not only *polypous concretions* of various kinds have been discharged †, but have also appeared to have lined the intire inner surface. In the second place, it is to be remarked, that Langhans relates ‡ having observed the left auricle of the heart burst by a *polypus*, which was of such bulk and strength, that it could by no means be reckoned newly produced; nor can we believe that it could have been formed at the very period of the patient's death, as it is quite obvious, that whatever fluid blood was in the auricle, or entering it, before its bursting, ought to have quickly flowed out on its being ruptured, and that none of it could be retained in it, unless what had long before become firmly united and coagulated.

* Van Swieten on Boerhaave's *Aphorisms*, § 176. p. 236. De Haen, *Rat. med.* Part iv. c. 2. Masotti, *Dell' aneurisma del poplite*, p. 28. † *AB. Helvet.* vol. ii. ‡ *Ibid.* p. 123.

264. In the third place, it is confirmed beyond a doubt, by a well-contrived experiment of Lan-

cifi. He tied up one of the iliac arteries of a living dog; fifteen days afterwards he opened the vessel, and found in it a *polypous concretion*, above the ligature *. Nor is it any objection, that the same experiment, on being repeated by another anatomist of great celebrity, did not answer. For Paschal Ferraria † tried the same thing, by tying up a branch of the iliac artery of a lamb, and clearly observed the same result. Likewise, before his time, Petit had noticed this in persons who had suffered amputation of any limb: for, on the second day after amputation, sometimes also upon the twentieth or thirtieth, he discovered *polypi* in the arteries of the amputated limb, which had been tied up, as usual, to prevent the blood from flowing ‡.

* *De aneurysm.* prop. xxxviii. p. 127. † *Delle morti, e malattie subitane*, 2nd edit. p. 39. et seq. Neapoli, 1767. ‡ *Mém. de l'Acad. des Scienc.* ann. 1731.

265. Are these polypous concretions to be ascribed to the failure of life, or to the coagulation of the blood succeeding to death? If, therefore, both the usual pulsation of aneurisms, on polypi being formed within them, very frequently disappears, and aneurisms of external parts, on being opened in the living subject, shew themselves to be full of polypi, and the auricles of the heart, when ruptured, sometimes exhibit polypi formed within,—and experiments, made both in living animals and in men, demonstrate their existence,—we may certainly infer, that the po-

Polypi which are formed in the heart, and blood-vessels too much dilated, or in any other way injured, are not all the effects of the failure of life, or of the supervening of death, as they are by some supposed to be.

266. But if the authority of such as deny the existence of polypi may be refuted by authorities of equal weight, we may bring into view the names of Pechlin, Malpighi, Smelly, Vater, Langguth, Schacher, Hoffman, Senac, Van Swieten, Morgagni, Haller, and others, authors of extensive learning, deep anatomical knowledge, and practical experience, all of whom both defend the existence of polypi, and have either themselves seen such as had long existed in the living body, or mention them as having been seen, on the authority of others. And although it cannot be denied, that blood newly drawn sometimes concretes into a very hard mass, adhering with considerable force to the glass vessel (which Pasta objects), still, with the illustrious Haller, we remark *, that *coagula* which are too hard and white, and therefore not suddenly formed, especially those found in the right auricle, in the valves of the veins, *chordæ tendineæ*, and processes of the heart, interwoven in such a manner that they cannot be separated without laceration, or, lastly, fixed as it were with their roots among the reticulated fibres of the heart,—which, with many others, the author has seen,—shew quite a different nature and manner of cohering

from what those do which are said to be either recently formed in dead bodies, or in the blood drawn from a vein.

* *Physiolog.* lib. v. sect. i. § 11.

267. Besides, what do symptoms preceding a polypus being found in the dead body denote? “Do not these,” says Haller *, “manifestly confirm the fact, that in the living subject there was present an impediment in the cavities of the heart, which was not formed latterly, and during the patient’s death; and that the heart palpitated on account of imperfectly emptying itself, being never able to free itself from that stimulus, which, arising from the polypus,—a thick body situate in the internal cavity,—could not but rouse the action of the heart?” Add to this, that Morgagni himself, who has with the utmost care collected together and reviewed all the arguments against the formation of polypi in the living body, does not deny the formation of polypi of all kinds. For both formerly in his *Adversaria Anatomica Secunda*, in the second animadversion, and lately in his *Epistola Anatomica Medica*, xvii. n. 9. as also in his xviii. n. 23. and, lastly, in his xxiv. n. 30. he relates, that polypi may be formed before death, especially in aneurisms forming a sac, and that he has sometimes actually seen them formed. Nay, he thinks it very difficult to suppose,—if the motion of the blood, although it be not intirely stopt, still should be retarded, as in great aneurisms,—that nothing, at least after a

length of time, should separate, concrete, and adhere from the mass of blood, either proceeding thither too slowly, or being even almost stagnant, in aneurisms forming sacs. For it is very improbable, that the whole quantity of blood will not readily return through the same orifice of the sac through which it was easily impelled. But although he affirms, that the blood may sometimes become coagulated in aneurisms, he denies that this happens in the heart, although preternaturally enlarged, on account of the fibres of the heart being more irritable, and therefore always re-acting more powerfully than those of the arteries, so that the blood can never become quiescent in it †. But those who object to the formation of polypi on this account ought to consider, that polypi may be formed, not only in consequence of deficient motion, but also that they arise from a tremulous one, such as in syncope or great fear affects the heart, as De Haën has clearly demonstrated; to say nothing of foreign bodies introduced into the blood, and causing it to coagulate. From all which, if I mistake not, it appears sufficiently evident, that the formation of polypi is not altogether incompatible with the living state.

* *Physiolog.* l. c.

† *Cit. epist.* xxiv, n. 30.

268. As some polypi, therefore, are formed during the period of death, and others long before that time, it appears that two kinds of them

are to be reckoned, the one consisting of true polypi, which have been formed during life, and have in fact occasioned the disease; the other of spurious polypi, which are only formed at the patient's death. The former consist of a firm, tenacious, elastic, and, as it were, fibrous substance, and adhere firmly to the sides, columnæ, and valves of the heart, or to the sides of the vessels, so that they sometimes cannot be separated without laceration; while the latter, occasioned by death, have the appearance of a soft mass, which can easily be separated, very similar to coagulated blood, or the inflammatory crust, as it is called; or they resemble red grumous blood below, and gelatinous, whitish, or yellowish above. Which division is so much approved of by Morgagni, that he even points out the method in which the polypi found in dead bodies ought to be referred to one or other kind*. On the whole, he is of opinion, that those which are formed in sacciform aneurisms take place before death, if they extend and adhere in every direction, so as not to seem to correspond with the posture of the patient or dead body; likewise, if they be of a dark or old colour, and unusually dry substance; and that by these distinctions the true differ from the spurious, or pseudopolypi, formed in the heart or vessels at death; as these, on the contrary, correspond exactly with the difference of posture in which a person has died or lain, the red part being placed

underneath, while the whitish gluten, or glutinous coagulum, appears above.

* *Epist. anat. med.* xvii. n. 27.

THE DIAGNOSIS.

269. HAVING thus explained the real nature and origin of polypi, I must now enumerate the symptoms by which their presence in the præcordia is supposed to be ascertained. Their principal marks are supposed to be, an intermitting or irregular pulse; violent pulsation of the carotid and subclavian arteries; palpitation of the heart; lipothymia and syncope; difficulty of breathing; and œdematous swellings of the feet. But how uncertain these symptoms are, as being common to many other diseases and causes,—inasmuch that they cannot be reckoned pathognomonic symptoms of polypus,—will appear perfectly manifest, partly from what has been delivered concerning morbid respiration, dropy of the chest and pericardium, lipothymia and syncope, asphyxia, small, weak, and intermitting pulse, and, lastly, palpitation of the heart; partly from the observations to be delivered in the following chapter, concerning aneurisms and varices of the præcordia. Nay, a true medical history relates*, and I myself have more than once observed, that some of these symptoms,—not excepting the intermitting or irregular pulse, which has otherwise been confi-

dered generally as being an uniform concomitant of polypus,—have at times been wanting in persons in whom a polypus has been discovered. Moreover, Albertini very judiciously remarks †, that thickness of the pericardium, or its cohesion with the heart, frequently assumes the symptoms of polypus, and leads to mistake; and that these morbid affections cannot be certainly distinguished, unless it be considered as a sufficient distinction, that in polypus the pulse generally recedes more from the natural one, and that, on applying the hand to the spot of the heart, a more manifest motion is perceived, while fainting is not so apt to occur as in them.

* Albrecht Thaer, *Nov. act. phys. med. acad. Cesar. Leopold. Carolin. N. G.* vol. i. ann. 1757. p. 6. Morgagni, *Epist. cit.* xxiv. n. 28. Trew, *Nov. act. med. &c.* vol. ii. obs. 53. *Com. de reb. in scient. nat. et med. gest.* vol. vii. P. i. p. 114.

† Concerning several morbid states of the respiration, among his *Opuscula*, vol. i. *Com. inst. scient. et art. Bonon.* p. 385.

270. Nevertheless, if the causes which are capable of inducing polypus have preceded, if symptoms of other affections of the præcordia be absent, or indications of such as are readily conjoined with polypi be not wanting; and moreover, if the pulse, though not intermitting, be unequally irregular; if palpitation of the heart; anxiety; extreme uneasiness; difficult respiration; cough; and an uneasy sensation in the chest, (which last symptoms indicate that the blood does not pass freely from the left ventricle of the heart

into the aorta, or that its return from the lungs is retarded in the pulmonary vein or left auricle), gradually attack the patient, and distress him unremittingly, we shall have reason to suspect the polypus to be within the aorta, or left sinus of the heart, or left auricle*. But if the respiration be little affected; the pulse languid and small; if the patient be distressed rather with tremor of the heart and anxiety, than violent palpitation; and if the veins of the neck throb and shew a kind of undulatory motion, it is more probable that the polypus is contained in the right cavities of the heart. Albrecht Thear †, in a patient, in whose right ventricle he found a great polypus stretching out into the pulmonary artery, while in the left there was a less one, running more than a foot into the aorta, accompanied with great enlargement of the heart,—had observed difficult respiration, and the greatest anxiety, with occasional faintings, or intermission of the pulse.

* Albertini, l. c. p. 391.

† L. c.

271. Of these symptoms some are constantly present, and others recur. The pulse, in particular, is almost always unequally irregular; nay, during the difficulty of respiring, which generally comes on, or is aggravated, upon any motion of the body, though slight, or on a change of the air, especially when the south wind blows, it becomes obscure, intermitting, and fails. But the tremor, palpitation of the heart, and dyspnoea,

return, or are aggravated, at irregular periods, threatening suffocation, lipothymia, and actual syncope. But whenever the intermission or irregularity of the pulse ceases, we must not suppose that the polypus also does so. For I have already remarked, that during the presence of a polypus in the præcordia, sometimes no irregularity or intermission of the pulse was discoverable (269.); that is to say, when the size, structure, or position of the polypus is such as, though it deranges the circulation of the blood, does not do so to an enormous extent*.

* Albertini, l. c. p. 390.

272. Malpighi, besides the intermitting pulse, and frequent fainting, has likewise frequently seen conjoined with polypus of the heart, a vibrating pulse, dilatation of the vessels of the neck, straitening of the præcordia, torpor of one or other arm, and an obscure pulse in the same, together with a spasmodic pain in the sternum*. Hoffman, however, asserts, that a fixed pain is perceived at first about the heart, with a sense of compression; but that when the disease has been of some standing, in addition to these symptoms, more frequent palpitation of the heart, and a very irregular pulse, frequently intermitting at intervals†, come on. Some add, œdematous swellings of the feet; some a red, some a purple, and others a cachectic colour of the face, accompanied with swelling of the eye-lids; panting, apt to come on while the patient is speak-

ing; the blood, when drawn, being tenacious, firm, and inflammatory; bad-conditioned fluids; and other consequences of the derangement of the circulation through the præcordia ‡. But I have already shewn (269.) with what caution these marks are to be trusted.

* L. c. † L. c. ‡ De Haen, Macoppe, Malpighi.

PROGNOSIS.

273. A polypus is generally considered as being incurable. Frequently it induces sudden death *, or the suffocating catarrh †. Sometimes it cuts off the patient by a slow death, and by hydrothorax and hydrocardia, into which those persons are especially liable to fall, whose face is swollen, or in whom oedematous swellings of the feet, or a cachectic habit of the body, have supervened. Riolan, Riverius, and others ‡, record instances of persons labouring under polypus having prolonged their miserable existence for fifteen or sixteen years. But although this disease be affirmed to be incurable, still, if it be recent, and the polypous concretions have not yet become indissoluble, De Haën and Langhans ||, from whom Albertini does not seem to have differed much, do not lose all hope, and suppose it practicable to remove the complaint by a proper method of cure; nay, they even record instances of some having been cured.

* Tulpius and Bartholin mention death having been suddenly occasioned by a polypus of the left ventricle; and Wepfer by one of the aorta. † Kirsten. ‡ A lingering death having

been occasioned by a polypus, is recorded in the *AB. Acad. Nat. Curios.* || *Rat. med.* p. ii. c. viii. *AB. Helvet.* vol. ii. p. 133.

THE CURE.

274. THE cure, therefore, rests upon the indications of resolving the lentor of the blood; of restoring to it its proper fluidity, and equable circulation through the vessels; of attempting the solution of the polypus, or at least of preventing its increase; and of mitigating the effects which arise from it. Hence bleeding, and indeed repeated, especially in plethoric and sanguine temperaments, is considered as being best adapted both for preventing polypus, and for dissolving it when it is already formed, as also for discussing or allaying its symptoms. But in the employment of it, some bounds must be observed, and due attention must be paid to the concomitant circumstances; that the vigour may not be too much reduced to the patient's great detriment, that the strength of the vessels may not be weakened, or the due crasis of the blood destroyed; which I have not unfrequently lamented to observe from the blood being rashly and inconsiderately drawn. The physician ought not always to be deterred from it, by the obscurity of the pulse, by the debility, or by a cachectic habit; for when the patient seems to be oppressed and suffocated, he is frequently surprisingly relieved by cautious bleeding; and it is better to attempt a doubtful remedy than none at all. On the whole,

however, nothing rouses the languid motion of the heart more, or procures a passage for the collected and stagnated blood, or resolves the concretion of it when begun, better than speedy bleeding, as the experiments made by Haller upon living animals demonstrate.

275. By this means, therefore, are we to obviate the violent palpitation which supervenes on orthopnœa and syncope. In cachectic, hydropic, debilitated patients, and in those affected with visceral obstructions, it is safer to let blood by means of leeches applied to the hemorrhoidal veins, or dry and scarifying cupping-glasses applied to the back and legs. Likewise frictions and painful ligatures, immersing of the hands and feet (if the œdematous swellings permit it) in warm water; strong sinells applied to the nostrils, and similar remedies, may be employed with advantage, as circumstances may require. Nor is it improper sometimes to employ cordial and gently resolving remedies, or even sedatives, and paregorics; when the languid powers of life are to be roused, or spasmodic and convulsive affections seem to require being allayed.

276. Whatever likewise oppresses the abdominal viscera, and compresses the vessels going thither, or is an obstacle to the free motion of the diaphragm, must be removed with all dispatch. The belly, therefore, must be kept free from fæces and flatus, by means of clysters and gentle laxatives, of which I have elsewhere made frequent mention. We must next employ those

things which dilute, correct, and attenuate the density of the blood and lymph, and obviate the causes from which the disease has proceeded. Nitre, vitriolated tartar, the *terra foliata tartari*, or its spirit, sal polychrest, honey, oxymel, and gum-ammoniac, prove remarkably incisive. On account of their saponaceous, and at the same time corrective property, we may employ, in the spring-time, ptisans of barley, fow-thistle, cheveril, and succory; and in the summer-time, medicated waters drunk abundantly, and for a length of time; under the guidance, however, of a judicious practitioner, for by means of them the whole mass of blood is diluted, all the vessels are unloaded, the circulation of the fluids is promoted, the oscillations of the fibres are roused, and the too great propensity of the blood to concrete prevented.

277. Senac prefers spirit of sal-ammoniac, salt of tartar, Venice soap, lime-water prepared by properly burning oyster-shells; and of these he desires to be taken, for a length of time, as much as seems calculated to the degree and obstinacy of the complaint. We must begin with a small dose, and gradually proceed to a larger. They possess so great a power of resolving polypus, that very large and hard polypi, extracted from dead bodies, and immersed in lime-water, mixed with Venice soap and salt of tartar, have been dissolved in a very short time*.

* See Senac, *Trait. du coeur.* vol. iv.

278. Langhans recommends *, as approved by experience, to be taken once or twice a-day, a powder composed of a scruple of Virginian snake-root, twelve grains of purified sal-ammoniac, and the like quantity of pure nitre. He next prescribes having recourse to the employment of steel, with the addition of gentle aromatics. Steel will be found most serviceable when debility of the solids, bad digestion, and a cachectic habit, indicate the use of strengthening remedies. De Häen also boasts †, that he has restored to health not a few labouring under polypi, merely by the antiphlogistic regimen. He used to give them, for six weeks, daily, half an ounce of the rob of elder-berries, the like quantity of the pulp of tamarinds, and a drachm of nitre, taken off in a full draught of whey. He added, in the evening, occasionally, the paregoric made from diacodium. We read of the expressed juice of the leaves of hops, or cheveril, being recommended by Albertini ‡, to which he sometimes added the milk of gum-ammoniac, prepared after the manner of Barthollet, or a portion of fresh spermaceti; and when it was necessary to act more decidedly, mixed with a few grains of the martial flowers of sal-ammoniac, or a quantity of the essential salt of some of the dissolving plants. On this account also are recommended, Virginian and common snake-root; dulcamara; arnica; extract of hemlock and wolfsbane; tincture of antimony, and the like remedies, possessed of an attenuant

property. But I am of opinion, with Boerhaave ||, Albertini §, and other judicious practitioners, that the decoctions of the woods, mercury, and volatile salts, as rousing the action of the heart and arteries too much, or rarefying the blood, and increasing its motion, when the presence of a polypus is suspected, either ought never to be employed, or with the utmost caution, after a due consideration of every particular.

* L. c. † L. c. ‡ L. c. || *Inst. med.* § 826.

§ L. c. Albertini observed a man, in consequence of using sweet mercury to salivate himself, attacked with an obstinate palpitation of the heart; as also another who died of an aneurism of the præcordia, both from the use of calomel, and from taking quicksilver; and, lastly, a third person, from rubbing in mercury, was seized with an enlargement of the right auricle of the heart, and dropsy of the pericardium, in consequence of which he died. Hence Paræ has remarked, that internal aneurisms frequently happen in those who have repeatedly undergone mercurial friction for the cure of *lues venerea*. Likewise the employment of the *corrosive sublimate* ought to be suspected, as appears from the remarks of Bonelli on Bassani.

279. With respect to the manner of living, pot-herbs, ripe fruits, and fresh-water fish, are preferable to animal food. Every thing glutinous, acid, or austere, and fermented spirits, nay, pure wine itself,—unless the suspicion of a cachectic habit, or debility of the stomach, require otherwise, in which case it may be diluted with chalybeate water,—ought to be discarded, as being liable to increase the thickness of the blood, or to coagulate it, or rarify and agitate it. For this reason likewise, exercise of the body, especially

in ascending an acclivity, is suspected to be hurtful. But gentle riding, in pure dry air, when the weather is calm, may be permitted. Violent emotions of mind also, and their causes, must be carefully avoided, especially love, hatred, grief, and rage. For some of them derange the natural functions, others injure and interrupt, or excite too much, the motion of the heart, and rouse its irritability; in consequence of which, either crude and impure fluids are transmitted into the blood, or the lentor increasing, a pre-disposition to stagnation is occasioned, or the vessels, on account of the too great impetus, are preternaturally dilated, so that the polypus becomes more apt to increase, or they suddenly burst.

CHAPTER XI.

CONCERNING ANEURISMS AND VARICES OF THE PRÆCORDIA.

280. WHAT in Latin is denominated *arteriæ dilatio*, by the Greeks is named *aneurism*, and by the Arabians *hyporisma*, or *aporysma*, or *embo-ryisma*. All do not explain the etymology of the word aneurism in the same manner; for some derive it from one word, some from another*. Among the Greeks and Arabians it signified that

swelling of an artery which arose from its rupture or division, and from the blood being effused into the neighbouring spaces †. In after times they deviated from this idea, and, adopting that of Fernelius and Vesali, they came to believe generally, that in aneurism the artery is not burst, but only dilated ‡. But Sennert, probably following Hildanus ||, has affirmed, that the nature of aneurism does not consist merely in the dilatation of an artery, but also in the bursting of its internal coat,—for it was formerly supposed that an artery consisted of two coats,—while the external one remains intire §. But Freind, rejecting the opinion of Sennert, Fernelius, and Vesali, and adducing many observations relating to the subject, has endeavoured to restore the opinion of the ancients ¶. If I mistake not, however, he has not accomplished his purpose. He only appears to have shewn, that aneurisms, when they attain the greatest degree of dilatation, at length burst, not that they previously consist in the rupture of an artery.

* Hieronymus Montius, as Lancisi mentions (*De aneuris. in gener. lib. i. propos. 1.*), has converted the word *aneurysma* into *encr-atio*, from a *privative*, and *νευρος, nervous*. But Sylvaticus (*Tract. de aneurys.*) derives it from the word *Ευρύω, dilato*. Lastly, M. Aurelius Severinus (*De nov. observ. abs. c. 7. p. 170.*) is of opinion, that it is to be derived from *Ευγυειν, effluere*, or *exilire*. The etymology of Sylvaticus, however, seems to be preferable to theirs.

† Galen (*Lib. Isagog. defin. med. et de tam. prat. natur. cl. iii. c. xi.*) observes: “An aneurism is the relaxation of a venous vessel, or the diffusion of the spiritual matter under the flesh,” &c. And

elsewhere; "When an opening is made in an artery, the affection is named an *aneurism*: it takes place when the artery is wounded," &c. From the words of Galen it is inferred, that he comprehended under the name of *aneurism* both dilatations of the veins and arteries, as well as the rupture of these vessels. He there adds one of many causes of the complaint, *wounding*; which he explains more clearly in the book *De cur. rat. per sang. miss.* 22. & 23.; observing, that a wounded artery is very apt to be attacked with aneurism. See Oribasius, *Collect. med.* lib. vii. c. xiii. & xiv. Aetius, *Tetrab.* iv. ferm. ii. c. li. and ferm. ii. c. x. Actuarius, the son of Zacharia (*Meth. med.* lib. iii. c. ii.), mentions, that by this name the Greeks understood simple dilatation of an artery.

† See Bonet, *Sepulchret. anat.* lib. iv. sect. 2. || Freind, *Hist. med.* § *Id. ib.* ¶ I. c.

281. It is now, however, perfectly well ascertained, that arteries, upon the cellular covering, with which they are strengthened, being removed or destroyed, immediately swell, and become preternaturally extended, without any division or laceration of the inner coat having taken place: nor can it by any means be denied, that aneurisms have sometimes suddenly been occasioned by a wound, puncture, or contusion; nor is it unreasonable, or repugnant to experience, to suppose, that, on the internal structure of the arteries being relaxed, eaten through, or lacerated, they should swell out, and form a tumour. Hence three kinds of aneurisms are established: one consisting merely of the dilatation of an artery; another consisting in the artery being ruptured, or in any way opened, and pouring forth blood; and a third arising from both causes, no-

ticed by Hunter *; although by some it is rejected as fictitious †.

* *Medic. observ. and inquir. by a Society of Physicians in London* vol. i. art. 37. † The authors of the *Europ. liter. journ.* vol. iv an, 1758. p. 114.

282. The aneurism belonging to the first kind by surgical writers is named *true*; the second species is called *spurious* *; and the third, as consisting of both these kinds, has been named by Hunter *mixed* †. Some add a *fourth* kind, namely, the *varicose aneurism*, which, they say, takes place when an *artery* and *vein* contiguous to each other are so perforated, that the blood passing from the former into the latter causes a *throbbing swelling* ‡; as, for instance, if the *vena basilica*, when bruised, communicate with a wound of the *brachial artery* lying below ||. Again, the *spurious aneurism* is distinguished into *diffuse* and *circumscribed*. The former takes place, when the blood, being effused, spreads widely through the cellular membrane; the latter, when the blood is forced out of the cellular substance, or aponeurotic membrane lying above, in such a way as to be collected in a narrow space §. The *spurious aneurism* is, moreover, divided by Foubert into *primitive* and *secondary*; of which the one arises immediately after the injury of an artery, and the other does not follow for some days after ¶.

* Platner, *Instit. chir.* § 420. 421. (+).

† L. c.

‡ White and Thomas, *Comm. Lip.* vol. xviii. P. iii. p. 408; and

Foubert, *Mem. de l'Acad. Roy. de Chir.* vol. ii. p. 535. || *Com. Lips.* l. c. § Hunter, l. c. ¶ L. c. (+). Aetius had already distinguished aneurisms into *true* and *false*; and Hunter is deceived in making Paulus Aegineta, who flourished in the eighth century, the author of that distinction.

283. But Lieutaud seems to approve of the distinction of aneurisms into *true* and *false*, only when they are external *. Which might likewise be said of other nice distinctions. It is not, however, absurd to suppose, that every kind may happen any where (181. 182.); and, if any difficulty arise, I imagine that it consists intirely in accurately distinguishing these, as such as are internally situate frequently escape being detected, either by the eyes or hands. It is not improbable, however, that true aneurism happens more frequently in the internal parts, and the spurious in the external, and especially in the joints, as Platner very properly suggests †.

* *Proc. de med.* l. i. p. 146. † L. c. § 422. An instance of false aneurism of the of the internal parts may be found in Tabernini (*Olf. anat.* n. viii. p. 16.).

284. From these general remarks the nature of aneurism will readily appear. It is either an artery preternaturally dilated into a swelling; or it is a swelling in the neighbouring parts, occasioned by the rupture or division of an artery pouring out blood; or it is the combination of these. This morbid state is in common to the veins also. Hence they either lose their proper figure, and acquire greater capacity, or, being burst, or divided, they pour

blood into the neighbouring cellular membrane. The first of these morbid states is properly distinguished by the name of *varix*, the other by that of *ecchymosis*, or *fugillatio*. For I do not agree with those who, under the single name of *aneurism*, comprehend both the affections of the veins and arteries.

285. I shall therefore proceed to speak of these affections, both of the aneurismatic and varicose kind, but of those only which take place chiefly in the præcordia, extending the space of the præcordia more than Celsus has done * ; with the view that almost the whole aorta, which is more frequently affected with aneurism, and the vena cava, which is liable to varix, may be conveniently comprehended in the same species. But before entering on the subject, it is proper to premise something concerning the division adopted by Lancisi in enumerating the aneurisms of the præcordia. He also has divided aneurisms into *true*, or *legitimate*, and *bastard*, or *spurious* ; employing these words, however, in a sense altogether different from that in which they are used by surgical and medical writers, which I have already observed. For he gives the name of *legitimate*, both to those which arise from relaxation of the texture of the arteries, and to those occasioned by a solution of their continuity. And, on the other hand, he names those aneurisms *spurious*, which have been occasioned at first, not by debility, relaxation, or resolution of the fibres of the villi forming the arteries, but by an in-

increased impetus of the blood, which the usual strength, or power of resistance of the arteries, is incapable of bearing without being burst asunder; so that relaxation or rupture of the villi, or coats, follows as the effect, but by no means as the original cause of the aneurism, and thus they may readily pass into true aneurism †. It is proper also to observe, that the *true* aneurisms of Lancisi by Sauvages are named *passive*, and the *false* by him called *active* ‡.

* Lib. ii. c. iii. lib. iv. c. i. & viii. lib. v. c. xxvi. † *De aneurysm. in gener.* lib. i. prop. v. ‡ *Nosol. meth.* vol. i. cl. i. cord. v. gen. 2.

286. But, with deference to Lancisi, who is otherwise a most excellent writer concerning these affections, the aneurisms, or dilatations, of the arteries to which the præcordia are liable, may be distinguished principally into two kinds, whatever their origin be; namely, into those in which the artery is expanded beyond the limits of nature in any direction, and into those which are occasioned by any part of an artery protuberating like a sac from the side of a vessel. For there can scarcely be any aneurism of internal parts, from which one or other of these kinds of dilatation can be absent. This division of aneurism, into *sacciform* and *not sacciform* *, was proposed by Morgagni †, whom Schreiber ‡, Valcarengi ||, and others afterwards followed. But besides the arteries, the heart also may be dilated in various ways; and

why may we not name such dilatations with Bal-
lonius § and Lancisi ¶, as well as many others,
aneurisms, dividing them in like manner into *sac-*
ciform, and *not sacciform* ?

* Those which are not *sacciform*, we may, with Sauvages, like-
wise name *cylindroidea*. † *Advers. anat.* ii. *Aort. animadv.* xxxviii.
and *Epist. anat. med.* xvii. n. 27. ‡ *Act. erud. Lips.* ann. 1731.
mens. Aug. p. 377. 378. || *De aneurys.* obs. 1. § *Consil.* 109.
¶ L. c. prop. 11.

287. The heart, to begin with it, is dilated,
sometimes intirely, sometimes only partially, and
not unfrequently is at the same time liable to
other morbid conditions, as polypi, *sarcomata*,
various kinds of tumours, and also erosion of its
external surface. Instances of the intire heart
being increased in bulk, and preternaturally di-
stended, are very frequently to be met with in
authors *. Sometimes dilatation is conjoined
with the greatest degree of extenuation or
flaccidity of its sides; sometimes the thickness
and strength of them is increased, with a di-
latation of all the cavities; sometimes only its
size seems to be increased, without the size of
its cavities becoming greater than usual. Some-
times, likewise, the coronary arteries and veins
are observed to be aneurismatic and varicose. It
is frequently so much extended, as, like a bul-
lock's heart, to equal in bulk, or exceed, a head
of tolerable size, or it is three or four times its
natural size †.

* The first authors who have noticed such enlargements are, Nicolaus Massa, an. 1534. *Introducſ. anat.* c. 28. Vesali, *De hum. corp. fabrica*, l. i. c. 5. Carolus Stephanus, *Diff. part. corp. hum.* l. ii. c. 33. Ballonius, *Epist.* l. ii. in *Conſl. autum.* an. 1573. Andreas Laurentius, *Hiſt. anat. corp. hum.* l. ix. quæſ. 18. Whoever wants more ample information may consult Bonetus, *Sepulchr. anat.* Schenck, *Prætyriſeion*, or *Obſ. de merar.* &c. Lanciſi, *De motu cordis et aneuris.* Kings-Macoppe, *De aort. polyp.* Morgagni, *De ſed. et cauſſ. morb.* Senac, *Trait. du cœur.* Paſta, *De cord. polyp. in dub. revocat.* Valcarengi, *De aort. aneurys.* obſ. 3. Matani, *De aneuris. præcord. viliis.* Van Swieten, *Comment. in Boerhaav. aph. de cogn. et cur. morb.* Lieutaud, *Hiſt. anat. med.* De Haen, *Rat. med.*: where may likewise be found instances of dilatation, not only of the heart, but also of the *aorta*, *vena cava*, and other vessels.

† Nicolaus Massa and Ballonius, in the passages quoted.

288. Sometimes only some parts of the heart, or one or two particular parts, are stretched out to an immense bulk. The right auricle, in particular, is liable to this morbid state, so as sometimes to acquire the size of half a heart, sometimes of a whole one, and sometimes that of the head of a new-born infant. Likewise the right ventricle becomes distended, as well as the left, and the auricle of the same side, in such a manner, that sometimes its rupture is threatened, or actually follows. But Lanciſi, as well as Morgagni, has observed more dilatations of the left ventricle than of the right; but fewer of the left auricle than of the right*. Van Swieten, however, affirms the contrary†. Sometimes only the right, sometimes the left cavities, sometimes both together are enlarged, as may be found in the anatomical observations of medical writers.

* *Epist. anat. med.* xviii. n. 5. † § 176.

289. Moreover, of the arteries situate in the præcordia, those which are principally affected with aneurism are the pulmonary artery; the bronchial artery; the aorta, both at its beginning, in its arch, and in the descending trunk; the subclavian, carotid, and axillary arteries; the coeliac, hepatic, splenic, and mesenteric arteries; the emulgent and iliac arteries; and their branches. But it most frequently happens, that the arch of the aorta is affected, both on account of its being nearer the action of the heart, and on account of its receiving the whole impetus of the blood, with its arch. Frequently aneurisms of the arteries are eroded, either in consequence of there being deposited in them an acrid humour, or one which is rendered acrid by stagnation, and pour out blood into the pericardium, into the cavity of the chest, or other neighbouring parts, both lacerated, eroded, and ruptured. Matani * witnessed the rupture of the pulmonary artery in a person while laughing over his cups. Tabarrini observed it eroded and pouring blood into the pericardium †; Morgagni found the aorta nearly corrupted ‡; and Mery saw it, on account of its increased size, beginning to separate from the base of the heart ||. Le Prot § observed, in a courier who had died suddenly, the bronchial artery affected in the same manner. Sometimes they become bony within, or are lined with bony scales. Wepfer ¶ died in consequence of the aorta being distended into an aneurism, on having be-

come ossified here and there. Morgagni ** and Valsalva †† mention the aorta having become indurated with an aneurism three inches in diameter, and covered in the inside with bony plates; and Albertini observed it covered with a bony crust ‡‡. Ruysch ||| and many others make mention of a monstrous aneurism three inches above the heart, accompanied with erosion of the inner coat of the aorta, which not unfrequently happens, especially in persons labouring under lues venerea. Not unfrequently the œsophagus and trachea are compressed with an aneurism of the aorta. A dilatation of it compressing the œsophagus and trachea is mentioned by Ramazzini §§; and another which so adhered to the œsophagus, that, in consequence of the erosion of the latter, blood passed into the stomach after the bursting of the aneurism, is mentioned by Matani ¶¶. Near the heart it is frequently so dilated, that it grows out to an immense size. Laurence formerly, and lately Paschal Ferraria, mention its orifice having become so much enlarged in an aneurismatic heart, that it was capable of admitting one's arm ***.

* *De præc. morb.* p. 120. † *Observ. anat.* n. 8. ‡ *Epist. anat. med.* xvii. n. 28. || *Hist. acad. Paris.* an. 1716. p. 51.
§ *Com. acad. Bonon.* vol. i. p. 345. ¶ *De Haen, in his life, Rat. med.* P. iv. p. 15. ** *Epist. cit.* n. 17. †† *Morgag. ib.* n. 23. ‡‡ *Com. acad. Bonon.* vol. i. p. 402.
||| *Observ. Chir.* n. 38. §§ *Morgag. epist.* xviii. n. 17.
¶¶ *De aneurys. morb.* p. 120. *** *Delle mort. malat. subit.* p. 89.

rious distant parts, break the bones lying opposite to them, obliterate cartilages, rendering every thing around them carious. Morgagni *, and before him Vater †, Schreiber ‡, and Flack ||, describe an aneurismatic sac, in the right side of the aorta, of an oval figure, larger than a kid's head, just before the common beginning of the subclavian and carotid artery, attended with a fracture and caries of the right clavicle, and with the destruction of the four first ribs, at the part where they continue long cartilaginous. Sandifort § describes a sacciform aneurism twenty-one inches and a quarter in circumference, and ten and a quarter in diameter, between the second and third true ribs, arising from the fore and right side of the aorta, and protuberating in the right side of the thorax, while it extended, on the left, beyond the sternum, two inches distant from the clavicle ; descending all the way to the right papilla, and internally stretching to the left ventricle of the heart, full of polypous blood, in consequence of which the patient's pulse had been weak and small. Another sacciform aneurism in the right side of the arch of the aorta, which had arisen after great exertion of the voice and body, is to be found in the *Miscellanea Variæ Literaturæ*, published at Luca ¶, which protuberated to the right side in such a manner, as to burst out between the second and fourth ribs,—the third being intirely destroyed,—equalling the size of a goose's egg. Similar to this was that

which Morand saw **, which had opened a passage to itself from the arch of the aorta, between the second and third ribs, and likewise between the third and fourth, and raised a double tumour externally. That one, also, is worthy of notice, which is published by Littre, as having arisen in the arch of the aorta in consequence of excessive reaching, which had continued for four days. In the middle it occupied the thorax, in the upper part it extended to the neck, ascending all the way to the lower jaw. Morgagni relates, that in a man accustomed to play with the wooden ball, and addicted to the copious use of wine, the anterior side of the arch of the aorta had expanded itself into a large aneurism, which had partly destroyed the top of the sternum, and extremities of the clavicles resting upon it, and had partly rendered them carious, and had at length broken out at the upper part of the sternum, under the appearance of a large boil ††. Guattani has recorded an instance of an aneurism of the aorta having arisen in consequence of violent terror, in a man of fifty years of age, attended with difficulty of breathing, fever, cessation of the left pulse, and palpitation of the heart, and exhibiting a tubercle as large as a pigeon's egg above the left clavicle ††. Albertini, out of Vesali, has described an aneurism in the aorta of a nobleman, about the vertebræ of the back, protuberating there into a swelling |||. Instances of aneurisms of the subclavian, carotid, axillary arteries, of the

bronchial artery, of the descending aorta, and of the cœliac, splenic, hepatic, and other arteries, may be found in the works of Valsalva, Morgagni, Nenci, Beauffier, Fantoni, Le Prott, Haller, Lancisi, in the *Parisian Transactions*, in Boucher, Bander, Matani, Tabarrani, and many others.

* *Epist. anat. med.* xviii. n. 25. † *Ephem. N. C.* decad. iii. n. ix. obs. 162. ‡ *Nov. Comment. Acad. Scient. Petropolit.* vol. iii. phys. n. iv. || *Ephem. nat. curios.* cent. v. obs. 74. § *Nov. act. phys. med. N. C.* vol. iv. p. 21. ¶ *Vol. ii. p. 184.*
 ** *Mém. de l'Acad. Roy. de Par.* an. 1707. †† *Epist. anat. med.* xxvi. n. 9. ‡‡ *De aneuris. intern.* ||| *Com. instr. scient. et art. Bonon.* vol. i. p. 402. et seq.

291. The veins in the præcordia, especially the vena cava and pulmonary vein, are subject to *varices*. Instances of this kind also frequently occur in the writers already quoted. A vast dilatation of the *vena cava*, with a very great enlargement of the heart, is mentioned in the *Miscellanea Natur. Curios.* tom. v. decad. i. observ. xl.; as also an instance of enlargement of the vena cava and right auricle, distended with blood, in a man of fifty-four years of age, who died suddenly, is related by Lancisi*; not to mention Morgagni, Albertini, and others. Moreover Parée, and several after him, make mention of the dilatation of the pulmonary vein. The *vena azygos* itself is not exempt from this affection. Heraclitus Manfredi †, in a phthical patient, found its trunk immensely dilated to the ex-

ment of a span, so that even after its bursting, which happened about the middle of its length, it resembled the vena cava in width. But an observation of Portali's claims our notice †. He mentions, that in the body of a hypochondriac, who, in consequence of the hemorrhoidal flux being suppressed, had fallen into a slow fever, which carried him off, the *vena porta* was so dilated as to resemble one of the intestines, accompanied with a very heavy and scirrhus liver ||.

* *De sub. mort.* obs. i. p. 243. & obs. iv. p. 281. † Morgagni
epist. anat. med. xxvi. n. 29. ‡ *Hist. anat. med.* T. 1.
 p. 125.

|| Likewise the *vasa brevia* are liable to varices. This appears from observations, and especially from one of Columbus, *De re anat.* l. xv. p. 292. In Cardinal Cibo, the vein which stretches from the spleen to the mouth of the stomach was of remarkable magnitude, and on bursting filled the stomach and intestines with blood, occasioning the patient's death; although, while he lived, he had lost some pounds of blood by vomiting and stool. Brassa-vola was present at this dissection.

292. We shall now proceed to the enumeration of the causes from which these morbid states originate. Of these some dilate the heart itself, or particular parts of it, or the *vena cava*, or pulmonary vein, or artery; some are very apt to induce aneurism, both of the heart, and of the aorta. To the first set belong most of the causes, which, as I have already observed (242. 243. 244.), induce palpitation of the heart. The chief of these, according to the observations of anatomists, seem to be, narrowness of the aorta *, or ossification of

the beginning of it, or of the semilunar valves; narrowness or induration of the pulmonary artery; pressure of its valves to the sides of the vessel; tumours, of whatever kind, in any way impeding the egress of the blood from the heart; external erosion of the heart; repeated and long-continued efforts to vomit. Some authors likewise, among these causes, enumerate air evolved and expanded in the cavities of the heart.

* An aneurism of the heart, occasioned by narrowness of the aorta, and induration of the valves, is recorded by Meckel, vol. vi. *Mem. de l'Acad. Roy. de Berlin*, an. 1750.; and by Morgagni, *Epist. anat. med.* xviii. n. ii. & n. vi.

I myself knew a girl of sixteen years of age, who, when labouring under an aneurism in consequence of narrowness of the aorta, from her infancy had been liable to tremors of the whole body, to great anxiety, palpitation of the heart, and irregularity of the pulse. At the time when her catamenia flowed, all the symptoms were aggravated, nay, I have observed them increased by bleeding, or the employment of purgatives. At length syncope supervened, and put a period to her existence.

293. To the other set are referred, a native and acquired debility of the heart or arteries; likewise too great rigidity*; violent motion; great exertion of the chest, as in blowing trumpets, or playing upon wind-instruments, driving a carriage, carrying loads, running, and dancing; loud singing, violent and long-continued coughing, mental emotions †, especially long suppressed rage; grief; sudden and great terror; blows ‡; a fall; gestation; wounds; polypus; the employment of mercurial remedies ||; ulceration of the internal coat of the arteries, or destruction of

the external ¶; too much blood, although this of itself be seldom sufficient; bad-conditioned fluids; a hereditary taint **; lues venerea; hypochondriacal, hysterical, rheumatic, catarrhal, hæmoptoic, and herpetic affections; and, lastly, immoderate eating and drinking. Lancisi lays so much stress on the last cause, that, of an hundred aneurisms, he asserts that at least fifty were occasioned in consequence of it. Likewise the heart's being enlarged gives occasion to aneurisms of the pulmonary artery or aorta; because, in consequence of forcing the blood too violently into them, it must necessarily urge, distract, and gradually enlarge one or other, or both of them.

* "Aneurisms in the aorta seem to arise from this rigidity, on account of the disease never happening in infants, very seldom in young people, and very frequently in people advanced in life, in consequence of the external coat being ruptured by the force of the blood." Haller, *Opusc. pathol.* obs. xx.

† On this principle Albertini accounted for this complaint not unfrequently occurring in men, while it rarely happens in brute beasts (vol. i. *Com. inst. scient. et art. Bonon.*). What belongs to this cause may be inferred from this, that if sudden, mixed, contending, and violent passions take place, aneurisms frequently arise, as it were, instantly; while varicose conditions generally take place slowly, in consequence of simple, long-continued, and severe cares.

‡ Instances will be found in Lancisi, l. c. prop. 21. Van Swieten, *Com. in Boerhaav. aph.* 176. Valcarengi, obs. 11. De Haen, *Rat. med.* par. iv. c. ii.; and others.

|| Albertini, l. c.

§ Haller, *Prim. lin.* n. 34.

¶ Lancisi, *De aneurysm. in gen.*

prop. 47. ** Albertini, lib. cit. n. 65. Each of them has observed, that aneurismatic vitiations of the heart and neighbouring parts have descended intirely from the same hereditary taint, handed down from father to son.

THE DIAGNOSIS.

294. IT is doubtless a very difficult matter to ascertain each of these morbid states (188. to 191.), and the various causes (192. 193.) from which they have proceeded. But that the investigation may be attended with less difficulty, we may observe, with Albertini *, that in morbid states of the præcordia, independent of other symptoms shortly to be mentioned, on applying the hand to the thorax, or to the spot in which the disease is, an unusual motion, either with or without pulsation, is perceived, or not at all. Generally the motion, which has conjoined with it an unusual and long vibrating pulsation, is perceived in a simple aneurismatic dilatation, either of the intire heart, or of the auricle, or left ventricle, or of the aorta, or subclavian, carotid, axillary, or other arteries, which proceed from the descending aorta. But the motion which is unaccompanied with such a pulsation, or is scarce perceptibly felt, is generally conjoined with dilatation in the trunk of the vena cava, or right ventricle †; or of the pulmonary artery, or vein; or of the bronchial artery; or of the subclavian and jugular veins. The observing of the presence or absence of the motion in these complaints is of the greatest service; although it does not rest upon so uniform a law, that, for many reasons, it may not be sometimes very much varied, in consequence of the degree, figure, and magnitude of the dilata-

tion, of the variety of its situation, combination, and other circumstances.

* *Com. inst. scient. et art. Bonon.* vol. i. p. 83. *De difficil. respirat. titiis.* In his *Opuscula.* † Albertini refers dilatation of the right auricle of the heart to morbid states, which he names *varicose*, because it induces a motion which is almost imperceptible, and, as it were, without any pulsation. But Burggrave (*Act. acad. nat. cur.* vol. x. an. 1754. edit. Norimb. p. 140. ; and vol. iv. par. iv. p. 684. *Tom. Lipsf.*) mentions, that in aneurism of the right ventricle, the hook of the heart is not intirely felt under the left breast, but under the sternum, and likewise in the right side of the thorax. To whose authority, I should ask, ought greater credit to be given? Albertini consulted experience alone, which is truer; while Burggrave appears to have attended to the nature of the place. But the pulsation seems to be deducible, not from the increased capacity of the heart, but from its violent contraction. Is this greater in dilatation of the right ventricle of the heart? Is the right ventricle on the right side, or behind? it appears not. Perhaps, therefore, he indulged too much in probability. This appears from what he himself confesses, that sometimes the right ventricle has not been found in a state of aneurism, when the pulsation had been perceived in the right side, but the arch of the aorta itself distended on the right side.

295. When the pulsation, however, is not very great, but moderate, or much less than the magnitude of the complaint causes, or when the condition of the place renders it, in some degree less sensible, the fingers are to be pressed to the neck, near the sides of the trachea, and under the clavicles, while at the same time the motion of the carotids, or the undulations of the jugular veins, are attentively examined; and this ought to be frequently repeated, especially after meals or exercise, or mounting stairs, that it may not escape

the observation of the physician. For there is a moderate pulsation, and much smaller one, or none at all, when the heart, although in a state of aneurism, has become hard, and, as it were, tendinous, or flaccid ; or when the sides of the dilated artery have become preternaturally indurated ; or contain within them an oblong polypous concretion of blood ; or become completely lined with a cartilaginous or bony coat. Which taint, when it happens, may be known, if it has been preceded by a pulsation, which has been of long standing, but has gradually ceased, in consequence of which the patient has become better. But when, without this cause, the pulse has become more obscure, it is then manifest that the strength is failing, and death approaching.

296. Besides, the practitioner must carefully inquire, whether the motion perceived by the hand recede from the natural one, or not, and in what manner, and how far it does so ? Whether it seem to be in the proper seat of the heart, or in the neighbourhood ? Whether the part retain its natural bulk, or shew a larger ? For it is a difficult matter to distinguish the pulsation of the heart from the pulsation of an aneurism situate near it, unless all these particulars be carefully investigated. If the seat of the disease be without the chest, where the ribs cannot be an impediment to the hand, we must consider well whether the diameter of the artery be really increased, —which a person acquainted with anatomy will

readily perceive,—or whether it be natural. For if the aorta or coeliac artery beat violently and quickly, and if that take place without any increase of its diameter, it will be a proof that no aneurism is present.

297. On an accurate investigation of these points (295. 296. 297.) being made, either symptoms indicating one or other morbid state are discovered, or none. If there be any, they may be confirmed; if none, their place may be supplied by others derived elsewhere: namely, from the morbid state of the respiration; from the pulse; from some sense either of weight or constriction, or of slight pain, occasionally affecting the region of the heart, especially if inordinate motion of the heart precede or be conjoined with it; from the patient's lying or sleeping on either side, especially the left, with difficulty; from interruption of the sleep, especially at the beginning, and from the patient's being occasionally obliged to shift his posture. At the beginning of the disease, however, or shortly after, the respiration is not affected, unless after quickened motion, or it is only slightly so, and generally at the commencement of the patient's first sleep occasions some necessity for shifting the side, or sitting up; but during the progress of the disease, likewise the injury of the respiration itself increases, or frequently from a slight cause is induced. For aneurisms either of the heart or aorta, or of any

other artery within the thorax, by their bulk compress the lungs, interrupt the motion of the blood through them, and frequently press upon the diaphragm itself, thus interrupting the free respiration *. Likewise an aneurismatic dilatation of the aorta, where it embraces the left branch of the bronchia, compresses that branch which is naturally narrow, in such a manner that the inspiration cannot take place through it †. The pulsation itself, in various ways receding from the natural habit of the patient in greatness or smallness, in tension, or softness, or vibration, or frequency, or irregularity, or intermission, or in any other way, if it continue so uniformly, whether in both or in one or other arm, as frequently happens in a doubtful case, will throw no small light on the subject ; provided attention be paid to the remarks already delivered concerning asphyxia, and small and intermitting pulse (Chap. VIII. of this Vol.). But every kind of irregular motion or pulsation of the heart, and injury of the respiration, do not immediately imply a morbid state of the præcordia, as I have frequently observed elsewhere. This is sufficiently evinced by hypochondriasis and hysteria ; chlorosis ; increased action of the heart ; or diminished capacity of the chest ; or both together ; or a warm temperament, and the prime of youth ; or the pulse being naturally irregular, or intermitting, especially in children, in old people, in persons labouring under confirmed gout, or when an at-

tack of it is threatened, in whom, if a fever supervenes, it becomes natural; as it recedes from the natural state in fevers of a bad kind, without any organic injury, and passes into an intermitting one.

* Morgagni, *Epist. anat. med.* xvii. n. 1. † Portali, *Mem. de l'Acad. Roy.* ann. 1769.

298. These symptoms, when either all or several of them are combined, when they continue long and uniform, and are unaccompanied with any other manifest disease of the chest, may warn us of incipient or already formed complaints of the præcordia, and still more if a rheumatic pain, as it were, especially at the commencement, be felt at the upper part of the thorax, at the shoulders, and from thence to the middle of one or both arms, and chiefly at the shoulder-blade; and lastly, if the causes already enumerated (293.) be present. When the complaints are aggravated, the crasis and distribution of the blood being deranged, not unfrequently on account of the difficult respiration, attended with orthopnoea, which at length comes on, the vessels of the lungs become somewhere turgid and distended, or are either lacerated, ruptured, or eroded, in consequence of which frequently in some the blood is discharged by spitting, in others lymph and serum come off. Hence coughing, congestions, and pleuritic pains supervene in peripneumony. To these frequently succeeds, or sometimes precedes, in consequence of the reflux of the blood

being retarded, or the lymphatics bursting, or a greater quantity of fluid being poured out by the exhalants than can be taken up by the absorbents, —dropsy of the pericardium, thorax, and abdomen; and from similar causes, constant sleep, confusion of thought, apoplectic affections, obstruction of the liver, and œdematous swellings.

299. So far of the common symptoms of aneurisms. We now proceed to those peculiar to each kind. When the heart, therefore, has become aneurismatic in each cavity, such an affection is distinguished by the following marks. On applying the hand to the left breast, the stroke of the heart is not only perceived there, but under the sternum, extending also to the sides farther than the natural size of the heart occasions; and its pulsations are so confounded, that they can scarcely be counted. Nay, an effect is produced, as if the whole chest from the neck to the *scrobiculus cordis* from side to side, were occupied by several hearts, beating together irregularly; and this effect is more or less violent, in proportion to the magnitude of the aneurism. Upon any motion of the body, the respiration becomes more laborious, and the palpitation of the heart more troublesome*. The patients also cannot lie upon the left side of the thorax, in which the pain, or weight, is generally felt: they are occasionally attacked with oppression of the chest, anxiety, orthopnoea †, and slight fainting-fits. Sometimes they both breathe and swallow more con-

veniently, when the body is bent forwards †. The pulse is generally great, hard, violent, vibrating, and at first slow, afterwards likewise hard, but quicker and more irregular ||. Sometimes, however, it is natural §; likewise small, fine, and intermitting; but in that case, extenuation of the sides of the heart, or too great flaccidity, or some other morbid state, or diminution of the nervous influence, is conjoined with it. It frequently, also, happens, that an aneurismatic heart falls down, depressing the diaphragm and the stomach, and occasioning uneasiness in the region of the latter. A prolapsus of the heart is then said to take place, and its pulsation is perceived chiefly in the left hypochondrium, or in the epigastrium, in such a manner that it is frequently mistaken for the pulsation of the cœliac artery ¶.

* Burggrave in *Act. acad. N. G.* vol. x. ann. 1754. edit. Norimb.

† Morgagni, *Epist. anat. med.* xvii. n. 6. 7. 8. 9. ‡ *Idem. epist.* xviii. n. 18. 19. || *Idem. epist.* xvii. n. 7. § *Id. ib.* n. 8. 9. ¶ *Id. ib.* n. 17. & 18. likewise *epist.* xv. n. 53.

300. But aneurisms of the aorta, if they be contained within the thorax, generally betray themselves by the pulsations, either above, or to the right or left, far from the seat of the heart; sometimes likewise they are manifest in the neck, temples, and back. The dyspnœa also is aggravated by motion, the pulse is hard, rather slow and vibrating, not intermitting, nor irregular (unless they be conjoined with other morbid states). Some-

times it is small and weak ; and the patient can lie readily upon either side *. Frequently, when they have acquired great bulk, they compress both the trachea and the bronchia, and especially the œsophagus, in consequence of which, suffocation, and in several parts some impediment to the deglutition, supervene †, especially when the patient lies on his back. Not unfrequently, long-continued and severe pains, which are relieved by a discharge of flatus, distress the patient in that side ; in consequence of which he is apt to believe that the complaint arises from wind. This, however, is by no means the case. An aneurism, rather by compressing the œsophagus, whether by restraining the flatus in the stomach, or by exciting a spasm, gives rise to a new uneasiness, which is at length relieved by the discharge of flatus, or the relaxation of the spasm ‡. Sometimes, likewise, the patients are sensible of the ascent of a kind of *aura* ; in consequence of which they suppose that the disease is *convulsive*. But this opinion is generally refuted by the presence of other symptoms, and chiefly by the necessity the patient is under of stooping forward ||.

* Morgagni, epist. xvii. n. 17. & 21.

† *Id. ib.* n. 25.

& 26. *Epist. item* xviii. n. 22.

‡ *Id. epist.* xvii. n. 14.

to 15.

|| *Id. epist.* xviii. n. 18.

301. According, therefore, as more or fewer, or one or other of these symptoms (295. to 300.)

precede, accompany, or follow any aneurismatic disease of the præcordia, the diagnosis will be more or less certain, or doubtful. It is likewise extremely obscure when the motion of the heart, as sometimes happens, is almost perpetually varying, and an organic injury is likewise found within the heart, as in the neighbouring parts; and, lastly, when several kinds of morbid states are variously combined, so that the symptoms peculiar to each cannot be discriminated, until the body has been dissected. Concerning which the greatest acuteness and deliberation are necessary.

302. The consideration of the diameter of an artery, when its pulsation gives reason to apprehend the presence of an aneurism, is always very necessary, but especially when the arteries lie more open to the hand; as those especially do which are situate in the lower part of the abdomen. For, by attending to this alone, Albertini, whose experience was very great, was never deceived in distinguishing an aneurism from other morbid conditions of the arteries. As, therefore, mere pulsation of the arteries cannot immediately be set down as a symptom of aneurism, we must guard against suspecting its commencement whenever a great pulsation is perceived in the lower part of the abdomen. For many circumstances may occasion it. In the first place, the greatest degree of emaciation may render the pulsations of the descending aorta, and its ramifications, more manifest.

Instances of this kind will be found in the works of Berengari *, Martiani †, and others. Likewise excessive fulness; compression of the arteries; a phlegmonic, scirrhus, or any other kind of tumour, situate in the pancreas, mesentery, or elsewhere, compressing the arteries; obstructions; spasms; and irritations of various kinds. Under this head come the spurious aneurisms of Lancisi, which consist merely in an unusually violent pulsation of the arteries, without dilatation. Marggraff ‡ observed a pulsation reaching from the umbilicus to the *scrobiculus cordis*, so great that it could frequently be overheard by the bystanders, which lasted for thirty-four years. And as he suspected that it did not arise from a genuine aneurism of a remarkable artery in the mesentery, because it appeared scarce at all enlarged in diameter, but from a spurious one, as Lancisi called it, and as, on account of its duration, he considered it as incurable, having at length given some remedies,—after a great variety which had been administered by others,—at least with the view of correcting the crudity of the fluids, the pulsation, contrary to all expectation, in a short time was completely removed ||. Tabarrani § found not only a pulsation in the epigastric region, but likewise a swelling as big as the fist, conjoined with other symptoms of genuine aneurism. But, in place of it, upon opening the body, he discovered a swelling at the centre of the mesentery, which compressed the aorta, and

was raised by its pulsations. Morgagni records a remarkable case of a middle-aged shoemaker, accustomed to drink much wine, who shewed all the symptoms of an aneurism of the aorta within the chest, and, besides, a manifest pulsation all over the body; in whom, however, upon dissection, no dilatation of the arteries, or manifest internal injury of them, was any where discoverable ¶.

* *Comment. ix. Super Anat. Mundini.*

† *Epid. vii. n. 3.*

‡ *Ala. N. C. vol. vi. obs. 131.*

|| *Morgagn. epist. xxxix. n. 20.*

§ *Observ. anat. med. ii. n. 9.*

¶ *Epist. anat. med. xxiv. n. 34.*

303. Likewise the diagnosis of the morbid states referable to the varicose kind seems to be difficult. For it is not easy to ascertain those which occasion a motion free of pulsation, or a very slight and obscure one; it is still more difficult to ascertain such as have not only an obscure, but likewise a deep-seated and confused motion; and most difficult of all to discover those which are attended with none, or scarce a vestige of any. Of this number are those which, arising within the pericardium, are so checked by the pericardium itself, either greatly indurated, or firmly adhering to the heart, that their motion is not at all perceived by us. A dilatation of the trunk of the vena cava, or of the right auricle of the heart, or of all its right cavities, according to Lancisi* and Albertini†, with whom also Morgagni agrees‡, is generally attended with a great and regular pulse. It appears from observation, however, that it has likewise sometimes been ir-

regular || ; nay, some authors inform us, that a varicose aneurism is denoted by a small, and by no means vibrating pulse. In it, moreover, straitening and oppression of the heart, together with fainting, distress the patient, which last sometimes terminates in the *syncope cardiaca*. Many circumstances, however, occasion great variations in these symptoms ; namely, firm adhesion of the pericardium to the heart ; other organic injuries conjoined with it ; a different and morbid proportion of the parts contained in the præcordia ; the action of the heart being either natural or morbidly increased ; the disease itself, according as it is either simple or complicated, recent or of long standing, and the like. Albertini §, on opening the body of a man, who, in consequence of quick walking, used to be seized with oppression of the heart and fainting, with a low pulse, found bony concretions occupying the sinus falcatus and right auricle of the heart,—which is frequently liable to dilatation,—while it was so dilated as to appear rather membranous than muscular. He has likewise seen others who, in an advanced state of the disease, contrary to what generally happens in it, could neither rise out of bed, nor sit up, without being attacked with oppression of the breathing, and fainting ; and who were therefore obliged to almost constantly lie down. Similar instances are recorded by Morgagni, and especially two worthy of remark, of which one ¶ shews the right auricle dilated to the size of a large purse, with increased

bulk of the heart, in consequence of which, during the last days of the patient's life, such an orthopnoea was induced, that he could not even complain of the oppression of the breast, while the pulse was of its natural standard; the other **, in which very great enlargement of the right auricle was succeeded by orthopnoea, a hard, quick, and small pulse, and dropsy of the chest, pericardium, and abdomen.

* *De aneurysf.* lib. i. † L. c. p. 390. ‡ *Epist. anat. med.* xviii. n. 27. || Morgagni, *ibid.* § L. c. ¶ Morgagni, *Epist.* xviii. n. 8. 9. ** *Ibid.* n. 10.

204. Lancisi mentions as a pathognomic symptom of preternatural dilatation of the right auricle and ventricle, either pulsation or fluctuation of the jugular veins. For he shews, that in consequence of dilatation of the right auricle and ventricle, the orifice in common to them, which is provided with the tricuspid valves, is so dilated, that these being stretched, and necessarily opening, a portion of the blood is forced back by the constriction of the ventricle through their chinks into the vena cava; giving rise to an evident dilatation of the jugular veins, and shortly, owing to the relaxation of the ventricle, to a similar alternate constriction, which, by incautious observers, may be mistaken for a dilatation and constriction of the carotids. But it ought to be remembered, that this symptom is sometimes conjoined with chlorosis alone; with pregnancy; with the tricuspid valves not being stretched, but only being

forced out by the blood, during a strong contraction of the heart (as happens in palpitation), and propagating the concussions to the blood of the veins *; with too small capacity of the left ventricle, or with any other obstacle opposed to the passage of the blood from the heart, exerting its effect upon the right cavities of it; and, lastly, with some, if not all of the tricuspid valves having become stiff or inflexible, or with erosion, rupture or relaxation of their cords, in consequence of which they either do not sufficiently shut the orifice to which they belong, or if they do, they may still be forced outwards, and inverted, and repel the blood into the veins †.

* Homberg. *Memoir. de l'Acad. des scien.* ann. 1704. from this cause observed a *palpitation*, not only of the *jugular veins*, but likewise of the veins of the arm. † Morgag. *epist.* xviii. n. 9. 10.

305. That we may, therefore, avail ourselves properly of this symptom, we must guard against mistaking for an *alternate pulsation of the jugular veins*, what is only a kind of turgescence of them, succeeding to a violent inspiration and expiration *, or that tremulous motion sometimes excited by the vibrations of the carotid arteries close to them. We ought next to inquire, whether the palpitation and concussion of the jugular veins be conjoined with anxiety and palpitation of the heart, fainting, a great and irregular pulse, and other symptoms of these affections (303.). For this symptom will then denote a dilatation of the right cavities of the heart; otherwise not.

But as the jugular veins may throb and beat, either on account of a morbid state of the right auricle, or of the right ventricle, Morgagni points out the method of distinguishing them. He observes: " You may conclude that they throb from the contraction of the right ventricle, if, at the same time that you fix your eyes upon them, on applying your fingers to the temporal arteries, or those of the wrist, you evidently perceive the veins rise at the same instant with the artery: while the contrary happens, if they do not beat in consequence of the contraction of it, but of that of the right auricle †."

* Valsalva observed the jugular veins to subside during inspiration, and rise during expiration, while Morgagni noticed the contrary to take place. *Epist. xix. n. 33.* † *Epist. anat. med. xviii. n. 12.*

PROGNOSIS.

306. ANEURISMATIC and varicose affections are very dangerous and distressing, especially when they have been of long standing, or have given rise to other complaints. For no cure has hitherto been discovered for them. On the whole, young and robust people, on being attacked with these complaints, are sooner cut off; while such as are advanced in life, or of a debilitated habit, support their violence longer. Women also bear them better than men. Monks are frequently affected with these complaints, and likewise bear

them for a length of time. Sometimes the complaint, in consequence of an hereditary taint, is transmitted from father to son. Albertini records an instance of five brothers having been carried off by these complaints, some suddenly, and others slowly. Those who die suddenly are cut off either in a state of syncope, or in consequence of the sudden bursting of the aneurism or varix. Sometimes, if the rupture at first be not considerable, but pour out blood slowly from a narrow opening, the patients survive it for a few hours, at length gradually sinking under it. Sometimes, likewise, without any rupture happening, being seized with an asphyxia, or cessation of the pulse, they drag out their existence for a few days longer. When taken early, however, these complaints may be alleviated at least, if not removed, and some hopes remain of prolonging the patient's life. Nay, if they can be distinguished in a nascent state, they might even be partly got under, and prevented from proceeding so rapidly to a fatal termination.

THE CURE.

307. THE cure ought to be directed to diminishing the *impetus* of the blood upon the vessels, and increasing their resistance; to correcting the whole mass of fluids, if they labour under any taint; to repair the morbid structure of the organs; and to restore to its original and proper condition whatever preternatural concretion or

adhesion has formed any where. We must endeavour, however, while we attempt to blunt the force of the fluids flowing into the vessels, or to increase that of the vessels acting again on them, not to exceed bounds, but only to effect as much as is necessary ; which, I confess, it is very difficult to do. We ought, therefore, to begin the cure with a very spare, bland, and cooling diet ; with the greatest quiet both of body and mind ; with watery drink ; and bleeding. How much is to be ascribed to bleeding appears from an observation of Garzia. He allowed the blood to flow in a man, whose artery he had opened, until syncope came on ; and then, after in a great measure exhausting the vessels, he applied a compress to the wound, which soon healed, without any aneurism following. The quantity to be drawn ought to be accommodated to the patient's age, temperament, habit, and strength, and to the climate, season, and other circumstances ; and it ought to be repeated as may be found necessary. Generally when the disease is incipient, or not far advanced, that is, when it has not passed its height, it is serviceable. It proves hurtful, however, in an advanced state of the complaint, when it has gone beyond that period *. It likewise affords the most immediate relief in violent affections of the respiration and oppression at the heart, particularly if expectoration tinged with blood, or pure blood, be passed ; but it must be

employed sparingly and cautiously, that there may be room for employing it again, which frequently becomes necessary, and that the patient's strength may not sink under it. It is likewise employed with great advantage in the spring and autumn, to prevent the symptoms and progress of the complaint. Nor ought any swelling of the extremities to deter the practitioner from it. For frequently, after the drawing of blood, upon a freer circulation being restored, such swelling, as being the effect of a morbid condition of the parts, is made to disappear †. This remedy, however, is contra-indicated by a swelled face, by a cachectic habit, or by a venereal, or scorbutic taint of the fluids, which announce that the complaint is about to pass into dropsy or anasarca. We ought to desist from it, also, when it no longer brings with it the usual alleviation. Morgagni ‡ also tells us, that we ought to guard against bleeding a patient much against his will. For it sometimes happens, that during the operation, or shortly afterwards, the aneurism bursts, and the patient expires; which, it seems probable, may be derived from the increased velocity of the blood occasioned by venesection.

* Albertini, l. c. p. 394.
n. 31. 32.

† Morgagni, *epist. med.* xvii.

‡ *Id. ib.*

308. It is hurtful, also, to purge the belly with powerful cathartics. For it is well known that some patients, in consequence of the imprudent

employment of such remedies, have been cut off during their very operation, or shortly after. The timely employment of gentle laxatives and clysters proves harmless. Nay, when the difficulty of breathing, and the swelling of the external parts are aggravated, it is proper to employ, clysters alone composed of prunel-salt, antimoniatic nitre, or turpentine dissolved with the yolk of an egg, or honey of roses. Sometimes also spasmodic affections of the belly require very gentle and anodyne injections.

309. Likewise acrid diuretics ought to be very cautiously employed, as experience has shewn, that by means of them the motion of the blood is excited too much, or nephritic pains induced, or hydropic swellings sometimes so much increased, that the respiration is almost overpowered, or, although the patients at first appear to be relieved by a copious discharge of urine, they are sometimes notwithstanding exhausted with a sudden, or at least not a slow resolution of the strength, and unexpectedly cut off. The following are considered as being extremely mild, and almost void of harm, namely, syrup of turpentine, especially prepared with sugar of roses, or quinces; the infusion, or powder of millepedes; nitre; and the spirit of the terra foliata tartari;—which are extremely well accommodated to the complaint, especially in anxiety of the chest, with an increased œdematous swelling of the parts. In that case, also,

oxymel of squills, Spanish honey, the volatile salt of amber, or its essence, may be employed. But Albertini particularly recommended the juice of plantain, both recently expressed, and also boiled to one half, and caused it to be drunk either pure, or mixed with the powder of the shells of snails. In the same manner, likewise, all heating and exciting remedies ought to be avoided. Likewise the remedies possessing a strengthening and vulnerary property, as it is called, ought to be of a mild kind; especially of that kind which preserves the blood gently fluid, if it appear to be too thick, or, if otherwise, which restore its due crasis to it. For these complaints are frequently accompanied with one or other morbid state, namely, either too great lentor, or too great fluidity.

310. Of the class of alteratives, therefore, those ought to be selected which are adapted to the causes of the disease, and indications already laid down. Generally succory, dandelion, fumitory, and sorrel, prove remarkably cooling, especially when boiled in whey. If, at the same time, somewhat of an astringent property be required, or it be necessary to gently draw off a serous colluvies by the kidneys, comfrey, plantain, agrimony, ground-ivy, hypericum, and similar plants, may be added. But when the whey, whether it be cows or goats, or the decoctions of the vegetables just now mentioned, do not answer, we may sometimes substitute with advantage the soup of river-crabs, and of the flesh of frogs, in which

the flowers of hypericum, or of ground-ivy, have been slightly decocted. To these, moreover, according to the various combinations with other diseases, are added, sometimes antivenereal, and sometimes antiscorbutic remedies, as, the powder of coral, or osteocolla, sometimes stimulants and antispasmodics. They may be conveniently received either upon quinces, or conserve of roses, or extract of hypericum, or any other proper vehicle. It is sometimes usual to add the *tinctura martis*, extracted by means of the juice of sweet apples, or iron filings reduced to a fine powder above porphyrites, or other remedies, according as the habit of body, condition of the fluids, affections of the hypochondria, œdematous swellings, syphilis, &c. require particular notice.

311. In the greatest difficulty of breathing,—which frequently recurs periodically, as it were, or at least occasionally attacks the patient more violently,—as we cannot always let blood (307.), we must have recourse to other remedies to relieve the respiration. Among these the principal are, volatile remedies applied to the nose, as spirit of balm, of human blood, of sal-ammoniac, and vinegar of wine; of these even somewhat may be given internally, as a few drops of the spirit of sal-ammoniac, or foot, or of the spirit of succinated hartshorn dropped into water of hyssop, or of maiden-hair. Likewise the freshest oil of almonds, or common olive oil, is generally em-

ployed with the greatest advantage, either by a spoonful at a time, or to the extent of a few ounces. But if it be necessary likewise to purge the belly, that the respiration may become freer, before expressing the oil, a little rhubarb may be added to the almonds. But the most efficacious remedy is friction of the extremities, or immersion of them in warm water. For, in whatever manner the blood stagnates and accumulates in the arteries and consequently in the aneurism itself, the very great anxiety excited by it immediately ceases, upon the other parts being relaxed by means of the warm water. Hence immersing the arms, hands, and feet in it, or wrapping them up in wet cloths, both prevents the paroxysm and cuts it short. The remedy is serviceable also when the left arm, which frequently happens, is painful and torpid. While the limbs are thus fomented with warm water, if friction of them be conjoined with it, revulsion more readily takes place; and if any convulsion accompany the complaint, it is resolved. Nay, friction alone, even dry, allays the tremours, spasms, and tossing, and induces sleep, as I have more than once observed. Sometimes, also, cold water thrown upon the naked breast has been observed to afford relief †. In the orthopnoea, or violent cough, which are occasionally excited, blood is discharged from the lungs, and sometimes a vein cannot be opened to allay it, nor when opened does it always prove sufficient. For stopping or preventing, therefore,

such a discharge, rest, abstinence, and demulcent drink, ought to be enjoined. Likewise the concrete juice of ground-ivy, employed along with catechu earth, has more than once proved serviceable.

* Albertini, l. c. Morgagni, epist. xvii. n. 27. § and Senac, *Trait. du coeur. &c.* vol. iv. † Albertini, l. c.

312. But the chief part of the cure and prophylaxis is contained in the regulation of the patient's diet. In place of wine, which ought to be forbidden, unless the stomach, the state of the patient's strength, and other circumstances require it, the drink ought to consist of simple water, or of that which is prepared with steel, or in which mastich, or quince-tree, or barley, have been boiled; adding, if it appear necessary, boiled grapes. The food ought to be sparing, very light, and only sufficient for supporting the strength. Pottage of ground barley or rice, taken with milk or thin soup, twice or thrice a-day, without any other food, has sometimes proved advantageous. Valsalva and Albertini inform us, that after one or two bleedings, employing a milk-diet for thirty or forty days, while the patient lay constantly in bed, has several times been observed to be attended with the greatest utility. Sleep and rest may be procured in the evening by means of emulsions of diacodium, or even by means of laudanum, when it is necessary to act more decidedly, as in the case of pains and spasms. In the

distressing pains occasioned by distension of the subclavian artery, remedies containing opium may be employed to allay the spasms. The laudanum which goes under the name of Van Helmont's *laudanum liquidum*, is the best form ; and it is given in the evening to the extent of twelve or fifteen drops, in water distilled from the juice of lettuce *. Lastly, all the remote causes must be avoided.

* Michellott, in *Opusc.* vol. i. *Com. instit. scient. et art. Bonon.*

PART II.

OF THE

DISEASES OF THE LOWER BELLY.

CHAPTER I.

OF DYSPHAGIA.

I. FROM the diseases of the chest we proceed, in order, to those seated in the *abdomen*. The first which presents itself is *dysphagia*, namely, the *difficult*, or *impeded descent of the meat, or drink, through the œsophagus into the stomach*. It is of no consequence whether a pain be experienced in it, or not; or whether the disease be rapid and acute, or slow and lingering*. Neither do I here wish to comprehend under it those impediments, which are more properly situate in the fauces, as being already explained in the chapter upon *angina*. Nor let it be supposed, because the œsophagus begins at the throat, and passes through the cavity of the chest, that I here treat of morbid deglutition improperly: for, if not in its seat, at least in its nature and connection, the œsophagus belongs to the stomach,—which lies in the abdomen,—as a continued appendix of it.

* According to Sauvages, *dysphagia* is difficulty of swallowing accompanied with pain. But it appears to me that a sense of pain may

be absent from it without the complaint itself ceasing. Nor by this definition is it sufficiently distinguished from *cynanche*, namely, inflammation of the pharynx, in which difficulty of swallowing is conjoined with pain. Nor do I agree with Matthew Van Geuns, who (in vol. xi. P. i. ii. of the *Haarlem Transactions*) gives it as his opinion, that *dysphagia* comes on and proceeds slowly, while *angina* attacks the patient suddenly. For sometimes dysphagia may both happen to arise suddenly, and proceed quickly, as will appear shortly; and, as has already been shewn, angina may come on slowly, and continue long. Vol. IV. Chap. XVII. par. 408. 419. 439. 443.

2. The ingesta descend into the stomach with difficulty, or not at all, if the passage be not open, or the powers promoting their descent be deficient. The passage is obstructed, if it be compressed externally by tumours of any kind in the neighbourhood of the œsophagus or throat; by the thymus gland; by the thyroid gland; by induration and swelling of the lungs; and by obstruction and enlargement of the glands of the back, or bronchial glands; by aneurisms, especially of the aorta *; by varices; by surrounding fat; by a spasm of the diaphragm; by inflammation of it and the parts in the neighbourhood of the œsophagus †; and, lastly, by immoderate bulk of the liver, and its stretching to the œsophagus, in such a manner as to force it against the vertebræ of the back. The passage, again, is obstructed, owing to a morbid state of the œsophagus itself, if the latter be straitened in consequence of spasm, or inflammation, callus, or scirrhous of its coats, or swellings of the mucous fol-

lides, or obstruction of the glands surrounding the cardia; or by swellings, scirrhus, callus, or polypus, or fungus, cancer, and similar morbid states of the upper orifice of the stomach; or if it be closed up by extraneous bodies being forced into it, being fixed and sticking there †; or if the sides of it have grown together.

* Morgagni, out of Valsalva, quotes an instance of an aneurismatic swelling which had arisen in the left side of the throat, in consequence of the aorta in the upper part being expanded into a sac, by which not only the aspera arteria and larynx, but likewise the œsophagus and pharynx, were compressed, and the respiration, speech, and passage of the food, interrupted. *Epist. anat. med.* xvii. n. 19. 20.

He adduces another similar instance, in numb. 25. of interruption of the respiration and passage of the œsophagus, in consequence of the pressure of a large sacciform aneurism of the arch of the aorta. The aneurismatic sac was situate under the right clavicle, at the sternum, and for two or three months had so increased, that it appeared like another head rising out of the middle of the sternum. A third instance of the same kind may be found in Morgagni, *Epist. anat. med.* xviii. n. 22.

† Schacht affirms, that few instances of *inflammation of the œsophagus* are recorded. *Inst. med. pract.* l. vii. c. xii. p. 249. Three such, however, as appeared on dissection, will be found in Morgagni, *Epist. anat. med.* viii. n. 25. xxxvii. n. 30. lix. n. 15.

‡ I have observed, in the case of a girl labouring under a *gastric fever*, depending on worms, a *dysphagia*, which arose from a collection of *lumbrici* in the œsophagus, and nearly occasioned suffocation. The fact appeared on dissection.

3. The powers which ought to promote the descent of the ingesta may be defective in several ways, but chiefly if the mucus, with which the

inner surface of the œsophagus is lubricated, be not secreted or supplied by its follicles; if the fibres of its mouth be straitened *, or its coats become rigid, cartilaginous, or bony; if the muscular fibres be eaten through by an ulcer, or labour under the greatest atony, or paralysis, whether it happens in consequence of a morbid condition of itself, or through the nerves; lastly, if some part of the œsophagus be expanded into a sac, of which Grasshvis adduces an instance †, or if the œsophagus itself be pulled down, by the stomach descending from its seat; or be in any other way elongated, or burst, a case of which was observed by Boerhaave‡; or be perforated by means of an ulcer, as Heister || observed in a phthifical patient.

* As it appears to be in point, we shall subjoin an instance of a singular dysphagia, extracted from the *Italian Journal*, hoping that it may prove acceptable to the reader.

“ In the month of December of the year 1782, an individual of the Dominican family, sixty years of age, died, after having been reduced to the last degree of emaciation by a *dysphagia*, under which he had long laboured, and the bad effects of which he had begun to experience at a very early period of his youth, when he could not swallow, unless very slowly, and but by compressing his throat with his hand; and, towards the close of his life, whatever food he took, although intirely liquid or nearly so, did not seem to reach to the bottom of his stomach, but he was obliged occasionally to reject it gradually. Upon dissecting the body, the only organic injury discovered was, a slight constriction at the top of the mouth of the œsophagus. Behind it, namely, where the pharynx terminates, a funnel-like cavity was found, into which the aliment

passed. Where it extended widest was its opening; it descended beneath, with a shut sac, behind the œsophagus, between it and the vertebræ of the neck, six or seven inches in length. Whenever the food had reached to the beginning of the œsophagus, where the constriction was, turning from the right passage, it entered the cavity just mentioned, where it remained until it was forced out by means of a spasm excited in it. This sac was a kind of hernia of the inferior and posterior extremity of the pharynx. The other parts were found. Gianella, an experienced practitioner of Milan, who was present at the dissection, communicated the particulars to me. I do not recollect that any person has described a dysphagia arising from a similar cause." [*Germ. Editor.*]

† *Act. N. C.* vol. vi. obs. 73. ‡ *Atrocis nec descripti prius morbi historia.* || Schacht, *Infl. med. pract.* lib. vi. c. xii. § 26.

4. The remote causes which give rise to these affections (2. 3.), of which innumerable instances are to be found in the works of anatomical writers, are, a too soft and delicate, or too dry and lean a habit of body; a strumous, venereal, or scorbutic virus; translations; acrid, poisonous, and coagulating ingesta; cold drink, or that which is too warm, as warm tea or coffee; ardent, aromatic spirits; adulterated wines, or those sweetened with sugar of lead; the habitual drinking of particular kinds of water; the eating of saline things, of the thorn-apple, and probably of certain species of mushroom; the bite of rabid animals; diseases of the head, chest, and nerves; errors in diet; and violent vomiting when the stomach is full.

* See Bonet, *Sepulchr. anat.* lib. iii. sect. iv. p. 745. to 755.

THE DIAGNOSIS.

5. ACCORDING as the patients, causes, parts affected, and other circumstances vary, the phenomena of the disease also differ. Every particular must therefore be duly weighed, if we wish to attain a knowledge of the diagnosis, and the particular cause which gives rise to the complaint. It almost invariably happens, that in this complaint the aliment, immediately on entering the œsophagus, is either repelled by it, or, descending lower, sticks fast in it, or proceeds slowly through the narrow passage, with anxiety, and sometimes with pain. Besides, as the disease advances, an unusually copious discharge of saliva generally takes place, while the food is passing with difficulty, which many consider as being a pathognomonic symptom of the complaint. But in this, as in most other diseases, all the preceding and concomitant circumstances must be examined with due care, before we can draw any certain conclusion.

6. Such are the symptoms which generally accompany the complaint. But symptoms peculiar to each particular cause are for the most part present, and will not escape the notice of an attentive observer. For it may be concluded, that the dysphagia is occasioned by a great tumour in the neighbourhood of the œsophagus, if the patient not only swallow with difficulty, but likewise feel a particular pain in the chest and parts

near the œsophagus, with a sense of weight and pressure, especially about the region of the mediastinum and diaphragm, and likewise with difficult and short respiration, sometimes also with the dread of suffocation; and particularly if a probang, on being introduced, detect an obstacle in some measure externally situate, appearing to compress the œsophagus *. Preceding diseases of the larynx, aspera arteria, or lungs, and the functions of these parts being injured, as a change of the voice; constant difficulty of breathing, gradually increasing; a cough; a hissing sound; snoring, and the like;—will shew that the complaint depends upon induration or enlargement of some part of the larynx, aspera arteria, or lungs. There is likewise present a particular weight at the chest, and, when a probang is gently introduced into the œsophagus, it meets with an obstacle, but such as appears to yield to it.

* A. P. Nahrvis, *De morb. œsoph.* in *Act. acad. Haarlem.* vol. xi. p. 179. et seqq.

7. When there is reason to suspect that the complaint arises from obstruction of the glands of the back situate near the œsophagus, the respiration is then almost free, and no symptoms (6.) of the voice or breathing being affected are present. Nor is the deglutition performed with pain. But, upon inserting a probang, if an obstacle be any where discovered, it occurs about

the fifth vertebra of the back ; and generally some of the glands elsewhere are obstructed and swelled ; and the body seems to abound with *pituitous* humours, or to be contaminated with a scorbutic, venereal, or strumous taint. But if the deglutition be attended with pain, or a sense of burning, and symptoms indicating suppuration or ulceration have preceded, or accompany it, (which may be easily discovered by the marks laid down elsewhere), it may be then conjectured that the dysphagia arises from ulceration of the œsophagus.

8. But when a fleshy excrescence, or fungus, or polypus, occupies the canal of the œsophagus, nearly obstructing the passage, it is very probable that the descent of the ingesta, particularly if they be solid, becomes much more difficult ; but that the body which is found, on introducing the probang, makes some resistance, which is overcome without difficulty. On the other hand, a scirrhus there, when it is not small, almost completely prevents the power of swallowing, and hinders the introduction of the probang, unless it be forced down with great violence. But if, when a resisting body is found, likewise a sharp and pungent, or lacerating pain, or heat be felt, we may conjecture that the scirrhus occasioning the dysphagia, is passing into cancer, or already begun to be affected with ulceration.

9. The diagnosis of the tumours inclosed in a follicle, or cyst, is somewhat more difficult, as they

can scarcely be distinguished from a scirrhus, fungus, or fleshy excrescence. If there be any difference, however, between them, it seems to consist intirely in the greater or lesser softness or resistance which the ingesta or a probang meet. Rigidity of the fibres of the œsophagus, as Nahuys affirms *, produces nearly the same effects as scirrhus. But instances are recorded of the œsophagus having become cartilaginous, and notwithstanding allowing the descent of the food into the stomach, without uneasiness being occasioned †. Hence mere rigidity, unless conjoined with diminished diameter of the œsophagus, will not occasion dysphagia. Moreover, in the case of mere rigidity, unaccompanied with narrowness of the passage, the probang can be more freely introduced.

* *Act. Academ. Haarlem.* vol. xi. p. 179.

† Morgagni,

Epist. anat. med. xxviii. n. 15. according to the observation of Gornia.

10. If the difficulty of swallowing proceed from excessive laxity, or paralysis of the fibres of the œsophagus, the ingesta neither occasion pain, at least deserving notice; nor does every thing pass with the same difficulty, for liquids are swallowed more difficultly than solids, contrary to what happens in the species occasioned by obstructions growing in the cavity of the œsophagus (8.). For both liquids and solids require some assistance, or irritation, or particular effort,

in order that they may pass farther down. But when a complete relaxation of the fibres takes place, the ingesta either stick in the throat, threatening suffocation, or regurgitate into the fauces and nose. In this kind of dysphagia, also, the probang is easily inserted, and meets with no obstacle. It is accompanied with, or preceded by, a lax, humid, languid habit of body; by torpor of all the motions or functions; by dulness of the mind; by comatose and paralytic affections; and by apoplexy.

II. Very different from this is the dysphagia occasioned by *spasm*. In it not only is the œsophagus either intirely or partially perceived by the patient to be constricted or straitened, but likewise the probang being introduced is strongly grasped by the surrounding canal. It generally comes and goes, leaving intervals of respite. Frequently the spasmodic constriction begins from the stomach itself; sometimes the spasm betrays itself at the fauces and neck, by a swelling, and sense of suffocation, and, if it affects the œsophagus any where particularly, it occasions the sensation of a ball sticking in the part, which, however, is not fixed, sometimes rising, and sometimes descending. Sometimes the whole length of the œsophagus appears to be so rigid as to convey the idea of a peg being fixed in it. The epigastrium then frequently becomes swelled and tense; the appetite generally fails, and occasionally also oppression and anxiety at the chest come

son; wind is discharged from the stomach, or attempted to be thrown off; shivering, stretching, and yawning intervene; nor are tremours, or other symptoms and causes of hysteria, or hypochondriasis, absent; among which the principal are, emotions of mind, as grief, melancholy, suppressed anger, and the like. A pain is sometimes felt under the sternum, sometimes it extends to the spine, and not unfrequently the voice itself is lost. This complaint is sometimes constantly present; sometimes remits; at one time it recurs at stated hours, especially in the evening, at another time it is prolonged for several days; sometimes it is of shorter continuance, and quickly goes off, although it is extremely apt to return upon any slight occasion. It is generally aggravated by cold drink, and alleviated by warm. This species, as Sauvages observes, accompanies opisthotonos and other tetanic affections.

12. Lastly, in order to distinguish dysphagia arising from defect of mucus; from dryness of the inner surface of the œsophagus; from the growing together of its coats; from inflammation of them; from spasm or inflammation of the diaphragm; from scirrhus hardness of the cardia; from an aneurism of the aorta; or from varices of the vena cava and other veins; from enlargement of the liver; from elongation, rupture, or expansion of the œsophagus; from saturnine things; from poisons; from the solanum; from

the thorn-apple ; from too warm or cold drink ; from worms, and other extraneous bodies getting into the œsophagus ; and whatever other species there may be ; we must pay the strictest attention to the remote causes, to the symptoms, to the effects which follow, to the part principally affected, and to the marks of other diseases from which they may arise ; which will by no means be difficult, if the observations already delivered at length in their proper places be kept in remembrance. Likewise some of the causes are applied externally, and are so obvious to our senses, that they cannot escape the observation of a physician who inquires carefully of the patient and his friends, with respect to what had been previously done by him ; what had been eaten or drunk ; what kind of life he had led ; and so forth. But in a difficult or doubtful case, nothing is attended with more advantage than consulting histories of similar diseases, and their appearance on dissection, of which we have at present a considerable number, and to compare them with our own cases *. For it is inconceivable how much light this throws both upon the diagnosis of the disease, and upon the cause from which it originates.

* Several passages to be found in writers, mentioning histories of dysphagia, depending on various and uncommon causes, may be consulted in Sauvages' *Nesology*, cl. vii. ord. 3. gen. 17.

THE PROGNOSIS.

13. WHEN the causes of the complaint are ascertained, we immediately perceive what apprehensions or hopes are to be entertained, and what assistance may be expected from the aid of medicine. For the degree of the danger will depend upon the magnitude of the cause. If, therefore, it appear to be such as not to admit of being corrected or removed, as is the case with most of the organic injuries of which I have already spoken, the patients are in the greatest degree of danger, and gradually fall off from want of food, at length sinking under the complaint, completely deprived of strength. If there ever be any hopes of recovery, they will depend on arriving at a knowledge of the cause, at the beginning of the complaint, before, from its progress, it becomes incurable.

THE CURE.

14. BUT of whatever kind the dysphagia be, or whatever its termination, I shall not omit mentioning the cure which appears to be calculated to each of them, that, if it be not adequate to the removal of the complaint, it may at least contribute as much as possible to its mitigation, and to the prolongation of life. Diminished capacity of the œsophagus, therefore, in any measure arising from rigidity of the fibres, requires moistening, emollient, and lubricating remedies, as decoctions

of marsh-mallows, mallows, and lint-feed, fat, bland, and recent oils ; mucilages of gum-arabic ; and gum-tragacanth, or starch, and things composed of these, to be given gradually and frequently. We must likewise occasionally insert into the œsophagus a probang, with an ivory head, or with one made of sponge, in order to cautiously and gently dilate the œsophagus.

15. If the cavity of the œsophagus be obstructed in consequence of swelling and obstruction of the glands, or straitened and compressed externally in consequence of an incipient callus,—incisive, resolving, attenuant, and opening remedies are indicated, as neutral and alkaline salts, soap, ferulaceous gums, extract of hemlock, and mercury, occasionally interposing gentle laxatives. But sometimes such is the difficulty of swallowing, that such medicines either cannot be taken by the mouth at all, or not in the requisite quantity. In that case, mercurial friction ought to be employed, especially if a venereal taint be suspected. In short, whatever the cause which has given rise to the obstruction and swelling of the glands may be, when the complaint is recent, rubbing in mercurial ointment upon the neck, so as to occasion some flow of saliva, is recommended by Munckley * ; who points out the utility of this plan, by a good many instances, which he adduces.

* *Med. Trans. published by the College of Physicians*, vol i. p. 165.

16. A similar method of cure is to be employed, if the complaint proceed from other tumours, scirrhus, or obstructed or enlarged liver (2.). But if they have passed into cancers, or begun to do so, as there is scarce any room for extirpating them, we must guard against all those things which act powerfully and sharply, and, on the other hand, employ such as allay acrimonies, mitigate the symptoms, and in any way resist the cancerous corruption. Of these the chief are asses milk, and goats whey; the soup of frogs and river-crabs; camphor, peruvian bark, medicated waters, the bath, occasional cathartics; and, when the pain is urgent, or inflammation apprehended, bleeding, and the cautious employment of opium. Ulcers, fleshy excrescences, and fungi, when they are discovered to be in the œsophagus, require gently detergent, repressing and drying remedies; and those means also are to be employed, which are supposed to correct and purify various taints and acrimonies of the blood, especially antiscorbutic, antivenereal, and antiscrophulous remedies, sudorifics, and the like.

17. Our exertions will be crowned with more success in treating the difficulty of swallowing, which arises from inflammation of the œsophagus, or neighbouring parts, or from worms; or from acrid and poisonous ingesta; or from hysterical and hypochondriacal spasms. For the remedies for discussing and resolving inflammation, I consider as being so well known, from the ob-

servations repeatedly delivered already, as not to require being mentioned here. With regard to worms, these must not only be destroyed by means of the more powerful anthelmintics, of which I will hereafter treat in a distinct chapter, but also must be expelled by the mouth or anus, by means of emetics, or cathartics. Acrid and poisonous ingesta ought to be sheathed by means of fatty and oleaginous remedies, or blunted by means of watery drinks given abundantly ; and, so soon as it can be done, they ought to be expelled by means of emetics and cathartics. The spasms, when their origin is ascertained, although they generally prove obstinate, and occasion more uneasiness than danger, are not difficultly allayed, except such as originate in the brain or spinal marrow ; for these last are more difficultly removed, as appears from tetanus, opisthotonus, and other spasmodic affections, particularly of the idiopathic kind. But if they be occasioned by a colluvies in the stomach ; by depraved digestion ; by the catamenia, or other usual evacuations, as that of the hemorrhoidal discharge ; the remedies to be employed are, cathartics, bitters, and tonics, of which I will immediately speak, or bleeding, aperients, and remedies for recalling usual evacuations. But if excessive sensibility, or irritability, or emotions of mind, be the cause, they are best removed by emollient, oleaginous, and anodyne remedies, especially opium, tranquillity of mind, and opposite affections.

18. Tode mentions a spasmodic dysphagia which had been induced, as he was persuaded, by the immoderate use of saline medicines. It had received no relief either from castor, or the effence of gentian, or peppermint-water, or the *liquor anodynus mineralis* of Hoffman, or his *elixir viscerale*; which is not to be wondered at, as all of those were rather calculated to increase the tension and irritability of the fibres. He removed it, however, in the space of three days, by means of a watery infusion of quassy-wood, prepared like tea, and drunk frequently in the course of the day *. It seems probable, however, that the benefit was derived rather from the quantity of watery and tepid drink, by which the irritating power of the salts was blunted, and the tone of the fibres relaxed, than by any peculiar virtue of the quassy-wood.

* *Collect. fac. med. Haunien.* vol. i. p. 205.

19. The dysphagia which arises from atony or paralysis requires remedies the very opposite of these. Relaxation, and diminished irritability of the fibres, when the power of swallowing is injured by that cause,—for it seldom happens that it intirely destroys the deglutition,—are corrected by all those things which draw off the serous and pituitous fluids, which by any acrid stimulus excite the muscular power, and which strengthen the fibres. By the long-continued employment of these remedies, the complaint, after continuing for a length of time, being apt to return, is re-

moved. It is attended with somewhat greater difficulty when the nervous influence is languid, as in paralysis of the œsophagus. The more obscure its origin is, and the slower and more tedious its progress, always growing worse, the less are the hopes of the patient's recovery. But when it suddenly attacks a patient, in consequence of a fit of apoplexy, the event may be guessed at by the greater or lesser degree of the primary complaint, of which it is a symptom. The remedies calculated to the removal of the complaint, I think clearly pointed out in Chapter IV. *On Apoplexy*, par. 142. et seqq. where I have treated of paralysis, enumerating the diseases of the head.

20. Extraneous bodies falling into the œsophagus, as pieces of money, nails, stones, bones, and the kernels of some fruits, and the like, or large pieces of solid food, not sufficiently chewed, sticking in it, deserve particular attention, as requiring immediate relief. In general, the descent of them is promoted by drinking water or oil, and, if that be not sufficient, they are gradually pushed down, by gently introducing a probang, or similar instrument. For, when they get down to the stomach, they afterwards easily open a passage for themselves by the intestines, so as to be discharged downwards in two or three days. They are seldom retained longer, although they have sometimes been observed not to pass out for ten days, or more; which may vary not a little,

according to the size and figure of the body swallowed, or the matter of which it is composed. I do not deny, however, that sometimes such bodies stop either at the pylorus, or in the other convolutions of the intestines, or at the valve of the colon, and remain long there, occasioning the most distressing complaint, as experience has too often shewn. Nothing promotes their passage from the intestines more than oleaginous, fatty, and mucilaginous substances, taken occasionally in large quantity. In this manner I have frequently observed, in infants and children, bodies of such a size and figure, as were supposed to be totally incapable of passing through the canal, generally by degrees make their way out.

21. Sometimes, however, it happens, that they cannot be removed from their situation in the œsophagus, either because they are fixed there, or because an instrument for pushing them down cannot be introduced. In that case the fingers, or a feather dipped in oil, ought to be inserted, to excite vomiting. If these means do not answer, a piece of bread, or some kind of fruit, ought to be swallowed, and forced down with a great effort, that, if possible, it may push down with it the adhering body. But if this also cannot be done, or be attempted unsuccessfully, a ball made of sponge, and tied well to a strong silk thread, must be swallowed, and again drawn up, in consequence of which, thorns, needles, and small bones, are either thrust down, or again

pulled up. Lastly, if these means also fail, some advise administering an emetic in water, that they may be rejected in consequence of exciting vomiting. For it is sufficient to pour a few drops of an emetic fluid into the stomach, to excite vomiting. The propriety of this plan has been frequently confirmed by the success attending it. A piece of beef, which had stuck in the middle of the œsophagus of a soldier, by no contrivance could be moved, either upwards or downwards. Schmucker adopted the singular measure of pouring liquid tartar-emetic into the vein of the arm*. About half an hour afterwards it occasioned violent reaching, in consequence of which the lump was easily rejected. I know not, however, whether this plan be always safe or practicable. The flesh, without doubt, in a short time would either have become corrupted, or have become otherwise digested, so as, in consequence of its bulk being diminished, to shift its situation, and pass down into the stomach, without danger. But could the same successful issue be promised in the case of harder bodies? Will it be said that vomiting would be equally harmless when sharp cutting bodies have been swallowed, as pins, nails, knives, or pieces of glass? It may rather be apprehended, that, in consequence of the efforts occasioned, they would be fixed deeper, so as to render their extraction impracticable. In such cases, therefore, if in any, the most prudent measures ought to be adopted, that the

practitioner may avoid the imputation of temerity. I must not omit to mention, that sometimes such bodies remain not far from the pharynx, fixed fast in the œsophagus, and are incapable of being extracted by any means. In this case Guattani, eminently distinguished for his skill in surgery, has proposed opening the œsophagus, at the side of the aspera arteria, for their extraction †.

* *Miscel. chir.* vol. i. p. 335. Likewise in *Com. Lips.* vol. xxiv. p. 325. † *De aneurysm. ad calcem.* See also vol. iii. *Harum. instit.* § cccclxxxvi. cccclxxxvi. in the notes.

22. It remains for me to say something concerning the regimen of those in whom the complaint has increased to such a degree, that even the thinnest aliment can scarcely be at all swallowed, and pass down to the stomach, on account of the extreme narrowness of the passage. In such persons it is necessary to gently dilate the œsophagus by means of a probang of wax, or, which is preferable, by a hollow flexible tube composed of wax, and through it, by means of a funnel, to introduce nourishing fluids to the stomach. An instrument of this kind, for the introduction of aliment into the stomach, may be seen in the works of Mauchart, who contrived it, and caused it to be made with this view. But if, as very frequently happens, even it cannot be admitted, injections of animal soup, or of milk and the yolks of eggs, and similar food, ought to be frequently thrown in, that at least in this way the life may be prolonged as much as possible. Nor will it

be without advantage, occasionally to plunge the whole body into a tepid bath of whey, or milk and water, or weak animal soup, with a little Canary wine, and to permit it to continue some time there, that the absorbents may attract the finer parts of the fluid, with which the body may be in some measure nourished. But it is a hard and wretched resource, to attempt prolonging the patient's existence in this manner; as in general our endeavours prove fruitless.

CHAPTER II.

CONCERNING MORBID APPETITE, AND LOATHING OF FOOD.

23. THE appetite is sometimes so morbidly increased, that not only all kinds of food are taken indiscriminately, without occasioning satiety, —as happens in *λυκορεξία*, or the *ορεξις κυωνος*, namely, the *fames canina*, and in *bulimus*, or the *fames bovina*:—but sometimes also a longing desire is conceived for certain substances, both foreign to the nature of food, as well as such as are employed in the way of aliment, as in the *pica*, *cissa*, *citta*, and *malacia*.

24. *Cynorexia* is defined to be, an insatiable desire for food, shortly succeeded by vomiting of the ingesta, or the speedy discharge of them by

stool. Thus, the stomach being freed from its excessive load, a fresh desire for eating returns, and the ingesta are again vomited, in the same manner as happens in dogs with a voracious appetite. But when the aliment is quickly passed by stool, sometimes half digested, such an affection by some is named, not *fames canina*, but *fames lupina*, or *λυκορεξια*.

25. *Cynorexia* and *bulimia* differ in this, that in the latter the immoderate appetite, if it be not shortly satisfied, is succeeded by fainting. The *pica*, *cissa*, or *citta*, again, is said to be that depravation of the appetite, in which an absurd longing is conceived for substances foreign to the nature of food, as lime, stucco, chalk, mill-stones, charcoal, cinders, glass, and ordure * ; while the *malacia* is that morbid condition of the stomach, in which particular kinds of food, or condiments, are taken, but in too great quantity, and too voraciously, such as herrings, pepper, ginger, salt, and the like †.

* Sennert relates, that there was a woman who used to eat chalk and pulverised mill-stones, to the extent of two pounds daily, with impunity.

† In Galen the history of a pregnant woman is related, who used to devour some pounds of ginger at a time, with the greatest avidity, and without any sense of heat being excited in her fauces or stomach.

26. But in the same manner as the appetite is frequently morbidly increased, or vitiated, so is

it sometimes impaired, or altogether lost. Impaired appetite is named *dysorexia*; total loss of it *anorexia*, or *apositia*; although by the last term some understand that loathing of meat in which the mere presence of food excites disgust and nausea. But these distinctions are not always nicely attended to by physicians, as they generally comprehend both *diminution* and *loss* of appetite under the single name of *anorexia*.

27. The proximate cause of *cynorexia* and *bulimia* appears to me to be, a certain troublesome sensation, in consequence of which the person affected feels a constant and eager craving for food. It is excited and kept up either by too great acrimony and activity of the gastric fluid; or by the remains of the food on the stomach having become acrid; or by the insertion of the ductus choledochus into the stomach and pylorus, as has been sometimes observed in ravenous animals*; by lumbrici, tæniæ, and other species of worms; by too violent friction of the sides and rugæ of the stomach upon one another; or by a convulsive and spasmodic affection of it, not unusual in hysterical women; or by increased sensibility or irritability of the stomach, from whatever cause, one or other of which may arise from any slight and natural cause occasioning a stronger sense of hunger, and inverting, or so increasing and accelerating the peristaltic motion, that, in consequence of it, fainting and vomiting succeeding the quantity of ingesta, or the too rapid descent of them, may be readily

understood to take place. This too quick descent of the food from the stomach is esteemed of such consequence by some writers, that in it alone, and therefore in the very quick emptiness of the stomach succeeding it, they suppose the cause of these complaints to consist. Nay, they contend, that the aliment descends from the stomach too quickly, on account of the pylorus itself being so much relaxed and open †, as not to be able to retard its descent as it ought, while, at the same time, the expelling powers of the stomach are acting with their usual force. They support their opinion by an observation of Ruysch ‡, who, in the body of a woman who had died in consequence of a long-continued *lycorexia*, found no other morbid condition, except an unusual dilatation of the pylorus, admitting all the fingers of one hand. During her life, immediately on taking food, when it had been scarce received into the stomach, it passed down to the intestines, and she was shortly after seized with gripes; until, being thus deprived of nourishment, and exhausted to the last degree, she was at length carried off.

* Bohn. *Circul. anat. physiol. progymnas.* x. p. 153. Ettmuller, *Oper.* vol. ii. p. 54. In a very voracious animal, namely, the ostrich, the biliary duct is inserted into the pylorus, according to Duverney; *Mem. de l'acad. des scienc.* an. 1692. p. 30. This happens also in the porcupine.

† Pallucci assents to this opinion, in a work of his lately pu-

blished, entitled, *Arte nuova, e facile di curare i mali*, &c. where, in p. 48. he remarks, that the disease, when arising from this cause, is cured merely by abstinence.

‡ *Observ. anat. chir.* obs. 47. p. 94. This observation is likewise related by Lieutaud, in his *Hist. anat. med.* vol. i. lib. i. art. 27. There also an observation of Platner is quoted, concerning a relaxed and dilated pylorus, in a man who had never laboured under the fames canina, or bulimia.

28. But both morbid conditions of the appetite, namely, *pica* and *malacia* (25.), seem to be derived from no other source, more probably, than from the condition of the gastric fluid being changed, in such a way as, by rousing the sensibility and action of the stomach, not only first to increase the appetite, but also, through the nerves, gradually to affect the sensorium commune, and afterwards the nerves proceeding from thence to the tongue and nostrils, in such a manner that the idea, both of desire for this or that, and of the pleasure to be derived from it, is excited in the mind. But a mental halucination, as some suppose, is not sufficient; since a particular change and action of the digestive fluids is necessarily required, that substances so absurd and different from the nature of food can be borne on the stomach, and digested with impunity. No wonder, then, that most physicians are of opinion, that an *aciditas esurina* exists in the fluids of the stomach; nor do I suppose that they are far from the truth, as patients labouring under such affections frequently throw up an eructation of acid fluid, and take in earthy

and alkaline substances with pleasure, by means of which the acidity being as it were blunted, they are generally cured. Moreover, most of the remote causes are of that kind which are calculated for generating or supporting a spontaneous acid ; such are, the abuse of crude substances, and unripe fruits ; hypochondriacal and melancholic affections ; a delicate constitution ; pregnancy ; suppression of the menses ; chlorosis ; cachexy ; bad-conditioned fluids ; childhood ; grief ; and an inactive life.

29. Moreover, the desire for food is impaired, or altogether lost (26.), by the defect of that sensation in which the natural appetite consists, and opposite causes (27.) ; namely, by a sluggish and viscid colluvies of the stomach ; by scantiness or sluggishness of the gastric fluid ; by the mixture of a putrid, purulent, or alkalescent principle ; by diminution, vitiation, or too great abundance of the bilious fluid ; by the natural sensibility or irritability being impaired ; by quickened motion of the blood, or its being accumulated about the stomach, as in some fevers ; by tumours ; by a scirrhus ; cancer ; ulcers ; and other morbid states of the stomach and neighbouring parts ; which, if they even affect the common origin of the nerves in such a manner, as to excite in it the idea of aversion or loathing ; or if they injure and oppress the stomach, so that it cannot retain the ingesta without uneasiness, pain, nausea, or

vomiting, it appears clearly why *apofitia*, or the greatest loathing of food, should be occasioned. The remote causes preceding these affections, are, emotions of mind, especially terror and grief; immoderate venery; constant exertions of intellect; excessive evacuation; suckling too long; pregnancy; accumulated fœces; the motion of a ship; the copious or frequent drinking of warm or tepid water; the excessive or frequent use of fatty, oily, putrid alkalescent, and narcotic things, of wine, and ardent spirits; a sedentary life; suppressed or increased evacuations; plethora; the heat of summer; the stagnant air in fenny situations; obstructions of the viscera of the lower belly; stagnant black bile; melancholy; fevers; and the like.

THE DIAGNOSIS AND PROGNOSIS.

30. THE diagnosis of each of these affections (33. to 36.), is quite evident from what has already been said; nor is the discovery of their causes difficult, if the description of each disease be kept properly in view. Let us rather proceed, therefore, to the prognosis of them. Morbid appetite of itself is free of danger, unless it be conjoined with other diseases, of which it portends either the danger, as in hectic fever, and in phthisis pulmonalis; or the duration, as in intermitting and slow fevers, and in dropsy; or the relapse, as in a state of convalescence. But cynorexia not unfrequently leaves behind it a coma-

tose state, or lientery, or atrophía; it has likewise been sometimes observed to terminate in bulímia, and at length in a fatal syncope. For the bulímia is more dangerous on account of the frequent fainting-fits which accompany and succeed it.

31. The *pica* and *malacia*, if they prove obstinate, especially in children and girls, may be expected to give rise to worse consequences, as cachexy, obstructions of the abdominal viscera, swelling of the belly, congestions of the mesentery, a bad state of the fluids, emaciation, atrophía, and dropsy. But it is almost unanimously agreed upon among physicians, that pregnant women run less risk. The following aphorisms of Hippocrates regard loathing of food, or anorexia: “To remain collected in one’s mind, and to take without disgust whatever is offered, is a good sign; otherwise it is bad*.—In a complaint of long standing, loathing of food, and thin stools are bad†.—It is likewise bad in dysentery, and worse conjoined with fever‡;” and, on the whole, the *aposthia* is most to be apprehended. It frequently indicates the most severe cause, scarce admitting of being removed. At the turn of diseases, weakness or loss of appetite denotes an imperfect crisis, and gives reason to apprehend a relapse of the complaint.

* *Aphorif.* xxxiii. sect. 2.

† *Aphorif.* vi. sect. 7.

‡ *Aphorif.* iii. sect. 6.

THE CURE.

32. THE cure of cynorexia and bulimia ought to be directed to removing the uneasy sensation of hunger, which I have mentioned (27.). This will be effected by removing each of the causes. When, therefore, these consist in excessive acrimony of the gastric fluid, diluent, watery, oily, fatty, and mucous remedies, cows-milk, articles prepared with milk, earthy, alkaline, and similar things, are indicated, and ought to be taken largely, and for a length of time. With these it is advantageous occasionally to interpose gentle evacuants, and thus to remove the fomes of the disease. Of the laxatives, white magnesia, employed liberally and repeatedly, is to be preferred. If the complaint do not yield to these, emetics may also be tried, when nothing contrary indicates them, with the view of shaking the whole gastric system, and expeditiously drawing off the noxious fluid. Ipecacuanha claims the first place. Increased sensibility and irritability of the stomach, and an increase of the peristaltic motion, as it may be sometimes reckoned among the causes of bulimia, ought to be allayed by opiates, by means of which also the vomiting, and too rapid passing of the aliment, are checked. They must be employed chiefly when a hysterical or hypochondriacal mobility of the nerves seems to keep up the disease. The sensation of hunger, also, is blunted by the use of generous and sweet

wine, according to Hippocrates, who observes (Aph. xxii. sect. 2.), "The drinking of wine removes hunger." This will be attended with more advantage, however, in bulimia itself, because, on account of its cordial power, it will prevent lipothymia and fainting. If the presence of worms be suspected, anthelmintics must be employed, of which I have elsewhere spoken at sufficient length *. In this case the mineral acids chiefly are proper, and particularly sulphuric acid, with which Poter is said to have cured a *fames canina*. Probably the complaint depended upon worms, or excessive irritability of the stomach, which might have been allayed by the sulphuric acid, without our supposing an alkaline volatile acrimony to be present, requiring to be corrected by an acid. Lastly, relaxation or dilatation of the pylorus, on account of which the too rapid descent of the food from the stomach, occasioning *cynorexia* or *lycorexia*, will be removed chiefly by abstinence, and by the judicious dividing of the patient's meals, in such a way that the empty stomach may give time to the pylorus for contracting itself. Nor ought we in this case to omit tonics and gentle astringents, combined with paregorics.

* Vol. II. *Of Fevers*, par. 449.; and they will be farther discussed in Chap. X. of the present volume, *Concerning Worms*.

33. With respect to the cure of vitiated appetite, or *pica* and *malacia* (23. to 25.), in it not only must we restore to the gastric fluid its natu-

ral condition, but likewise the fault in the patient's imagination must be removed, and the stomach strengthened. Frequently the cause or fomes of the complaint is removed by gentle vomiting or purging. If too great acidity be present, it is corrected by earthy, alkaline, and absorbent remedies, namely, crabs-eyes, *terra nucerina*, *terra lemnia*, bezoar mineral, as it is called, magnesia of nitre, and corals given in the form of powder. Suppressed evacuations must be recalled by all means. We must proceed with more caution in the case of pregnant women. For in them nature frequently provides for itself, either by exciting a vomiting, or by its arising spontaneously, so that, after the third or fourth month of gestation, the vitiation of the appetite intirely ceases. Upon the whole, the patients are to be gradually restored to a proper method of living, and to the employment of salutary diet, by means of pleasant entertainments; by rich port wine; by agreeable conversation, and sensible advice; by tart, bitter substances; by tonics, especially chalybeates, and the like.

34. Lastly, the cure of *dysorexia*, *anorexia*, and *apofitia* (26. 29.), is to be obtained by those remedies which are adapted to the variety of the causes. If sluggish and viscid humours oppress the stomach, blunting its sensibility and irritability,—which will appear from the habit of body, temperament, age, preceding manner of living, an insipid taste of the mouth, sluggishness of the saliva, whiteness

of the tongue, and heaviness and weight in the epigastrium,—they must first be dissolved by means of neutral salts, gum-ammoniac, and Venice soap, and afterwards drawn off by means of cathartics. On this account the best remedies are, rhubarb, aloes, agaric, and various remedies composed of these. Nor is gentle vomiting to be rejected, when the patient is accustomed to it, or disposed to vomit, or when the disease does not yield to the remedies already mentioned, and no symptom contra-indicating it occurs.

35. But if the gastric fluid appear to be sluggish, and atony of the stomach be at the same time combined with it, which will be ascertained by the consideration of the remote cause, it will be proper to employ aperients, bitters, gentle aromatics, stimulants, and tonics. Among these the most conspicuous are, wormwood, southern-wood, lesser centaury, germander, mint, avens, wild valerian, squaw-wood, cascarilla and orange bark, peruvian bark, and, particularly, steel. Infusions, decoctions, tinctures, extracts, and various kinds of elixirs, according to the variety of the substances, of the patient, and time of life, are prepared from them. The elixir of Paracelsus, which is in great estimation, is composed of aloes, myrrh, and saffron. But it must be used cautiously in warm and dry temperaments, and in hot countries or in the summer-season, for it proves too heating and stimulating.

36. When a bitter taste in the mouth ; a yellow colour of the tongue, eyes, and skin ; offensive evacuations ; and deep or yellow coloured urine ; denote abundance, alkalescence, or corruption of the bile, we must correct and evacuate the bilious colluvies which has destroyed the appetite, by means of the subacid juices of vegetables, tamarinds, cream of tartar, or gentle emetics. Likewise the common salts, or sal polychrest, are found to be remarkably cleansing and evacuant. If it appear that the loathing of food proceeds from abundance or quickened motion of the blood, or from congestion of it round the stomach, by the symptoms of plethora, or quickened motion of the pulse, or the suppression of customary evacuations, it becomes necessary then to open a vein, to recall the hemorrhoidal discharge, to promote the flow of the catamenia, and, by means of the saponaceous vegetable juices, to resolve the blood stagnating in the abdominal viscera, and restore its circulation. Under this head come the juices of succory, dandelion, agrimony, grass, or decoctions of these, with honey or oxymel, or whey boiled with some of these plants, or with the pulp of tamarinds mixed with some neutral salt, and given *per epicrasin*.

37. Lastly, the species of anorexia, which depend upon the presence of other diseases, cannot be cured but by removing the primary disease, if that can be done. When the primary disease is incurable, every attempt to restore the appetite is fruit-

less. The patient, however, is not to be intirely given up, and we must endeavour to alleviate his sufferings as much as possible, by administering tonics and antiseptics, and the most nutritious substances, accommodated to the patient's habits. But, in every kind of depraved appetite, such a regimen, in regard to diet, ought to be adopted, as is calculated for removing the causes. In general, excessive cares, and whatever diminishes the nervous energy, or vitiates the natural condition of the fluids, ought to be carefully avoided. The body ought to be strengthened by means of walking, riding in a carriage, or on horseback, running, hunting, and repeated friction. Likewise, the timely employment of the cold bath, and medicated and mineral waters, is considered as being of the greatest utility, and contributes very much, both to prevent and remove the complaint; the food ought to be light, agreeable, and gently stimulant. Ripe fruits, and pot-herbs, are generally borne well, and excite less nausea. Pure wine, which is not rich, nor sweet, but thin, acidulous, or somewhat austere, as Rhenish wine and Burgundy, but which has been long kept, or similar wine appears preferable to others, and may therefore be allowed.

CHAPTER III.

OF MORBID DIGESTION.

38. FOUR kinds of morbid digestion are to be found in the works of practical writers, namely, *dyspepsia*, *bradypepsia*, *apepsia*, and *diaphthora*. The *first* takes place when the digestion is imperfect, and difficultly performed; the *second*, when it is performed more slowly than is proper; the *third*, when it completely fails, in such a manner that the crude aliment remains upon the stomach, or is passed unconcocted; and, lastly, the *fourth* occurs when the aliments rather undergo spontaneous corruption than digestion. It seldom happens, however, that these morbid states appear separately as they have been described; but they are very frequently found variously combined together. And when the diaphthora, or spontaneous degeneration of the aliments takes place, a double kind of crudity arises, namely, an alkalescent or putrid, and an acrid one, by some named *soda*, or *ardor ventriculi*, or *pyrosis*. To these may be added, a rancid crudity, which is easily distinguished by its taste from the rest.

39 As several causes necessarily concur to effect the natural digestion, which are explained in the physiology, so the want, diminution, or vitiation of all or some of these, destroy, retard, diminish, or vitiate it. Under this head, there-

fore, come most of these causes by which (27. 29.) I have already shewn the appetite to be injured, vitiated, or destroyed; and, moreover, bad articles of diet, too great a quantity of it, and its being ill dressed; scantiness of the salivary and gastric fluid, or of that of the duodenum, namely, the bile and pancreatic fluid; sluggishness, and a vitiated state of them; swellings, ulcers, callus, and other affections with which the stomach is either immediately or remotely injured, irritated, compressed, or relaxed; and, lastly, that which is considered as being the most frequent cause, namely, atony and paralysis of the stomach; or, on the contrary, a spasm, in consequence of which its motion either becomes languid, or ceases, or is deranged, or checked. When the complaint is owing to atony and paralysis, it is named by some also *imbecillity* and *resolution* of the stomach.

THE DIAGNOSIS.

40. THE persons principally liable to depraved digestion are, those who lead a sedentary life, and are devoted to study; those who have long laboured under affections of the mind, as hypochondriacal and melancholic people; such as are in a state of debility, or exhausted with wine and venery. They are distressed with a weight, inflation, languor, distension, and anxiety of the stomach; a sense of fluctuation in it, rumbling, flatus, and frequent eructations, particularly distressing five or six hours after meals; flushing

of the face; difficult, or laborious respiration; a bad taste of the mouth; the tongue being covered with white or yellow mucus; throwing up of the food half digested; the appetite being for the most diminished, the belly often bound; pains of the stomach or intestines; borborygmi; sometimes diarrhœa, ash-coloured or greenish fæces; slight fainting-fits, especially when the stomach is empty; the sensation of a ball rising to the fauces, and sticking there; palpitations of the heart; flying sweats; great changeableness of the pulse; pains in the head, especially in the forehead and temples; *tinnitus aurium*; watching at night; disturbed sleep; paleness of the face; lowness of spirits; fear; and, lastly, emaciation. Such are considered as being the symptoms in common to every kind of depraved digestion. There are some, however, peculiar to each kind of crudity, but they are chiefly distinguished by the taste of the mouth, and eructations; for, in the alkalescent species, a putrid taste, like that of rotten eggs, is perceived, and the patients loathe every kind of flesh, soup, or animal food; and, on the contrary, nothing but acids, acescent things, and vegetables, are desired. But, in the acid crudity, an unusual acidity infects the saliva, and whatever food, or fluid, is discharged from the stomach, along with the eructation or flatus, is accompanied with an acid taste, burns the fauces, and, when thrown on an earthy substance, effervesces like vinegar.

In this species the patients frequently complain of a sense of burning in the stomach, as if it were corroded. Lastly, the rancid crudity follows the use of fatty, oily articles of diet, and especially things prepared with butter or milk; and the fauces and mouth are affected with eructations like rancid butter.

THE PROGNOSIS.

41. I HAVE shewn in what manner the different kinds of depraved digestion manifest themselves. It remains for me to speak of the diseases which are the usual sequels of them. These are almost innumerable; but such as are of more frequent occurrence seem to be, cardialgia; colic-pains; various kinds of alvine discharges; hypochondriasis; cachexy; scurvy*; phthisis; atrophia; obstructions in the lower belly; dropsy; arthritis; gout; nephritic, and other chronic affections; and likewise acute or slow gastric fevers; and putrid, malignant, and sometimes exanthematic fevers. We must not, therefore, neglect such kinds of morbid digestion, and, as far as the causes of them admit, correct them to the best of our power. Our expectations of a cure, however, rest intirely upon the recency of the complaint, upon its slightness, and upon the tractableness of the patient in restricting himself to the regimen proposed by his physician. We must not, however, hastily pronounce our judg-

ment ; as a relapse of the complaint is frequently occasioned by the slightest errors in the diet. Sometimes, likewise, it is kept up by causes which it is impossible to remove ; among which is to be classed paralysis of the stomach, which is seldom and very difficultly curable.

* The transition from depraved digestion to hypochondriasis, and from the latter to scurvy, easily takes place. Upwards of twenty-five years ago, Domenico Bertolati, an inhabitant of Fayence, in the prime of life, and of a melancholico-bilious temperament, laboured under an acid crudity, in consequence of which he not only fell into hypochondriasis, but likewise into actual scurvy, confirmed by all its symptoms ; which, however, was not of the putrid kind, as it generally is, but of an acid and cold nature. Such was the extent and progress of the spontaneous acidity, that the saliva and other fluids in taste resembled the most acrid and corroding vinegar. Nor could this acidity by any contrivance be blunted or corrected, although he was under the care of several excellent physicians for a long time ; so that, being at length exhausted with a slow consumption, and the powers of life gradually failing, he expired. I have seen a nobleman of Florence labouring under scurvy from the same cause, who was attended by the profound and skilful Manetti. Such was the disposition to an acid crudity, that he could neither take the soup of flesh, nor flesh itself, excepting of foreign fowl prone to alkalescence. For all other food, even soups and flesh, contracted a most disagreeable acidity on his stomach. The vegetable diet, so highly recommended by Cocchi, on being several times tried, always proved highly detrimental. Such instances, I confess, are rare, but as they have actually happened, and been witnessed by myself, I could not pass them over unnoticed.

THE CURE.

42. As the causes of the loathing of food are nearly the same as those of depraved digestion, so

The indications and method of cure proposed with respect to it (34. to 37.) apply to this disease also. In general, aperients and bitters are recommended, as promoting the secretion of the gastric juice, bile, and pancreatic fluid, increasing the quantity of them, and restoring their natural crassities. They ought not, however, to be used indiscriminately, and without a judicious selection. For, as in every other disease, the patient's age, temperament, and sex, and the climate and season, must be considered; and, according to the variety of these, sometimes one, sometimes another set of them, ought to be employed. In warm and dry temperaments, the principal aperients and bitters are, grass, fuccory, sorrel, strawberries, grimony, and dandelion; while, on the contrary, in cold and moist habits, it is better to employ the roots of smallage, parsley, carrots, wormwood, southernwood, horehound, and the like. The same may be said of cathartics and laxatives. In the former case, crystals of tartar, tamarinds, manna, and neutral salts; in the other, rhubarb, aloes, the fixed salts of plants, and Venice soap, will be preferable. The precepts laid down in the therapeutics, therefore, must be well attended to, and the remedies cautiously accommodated to circumstances.

43. In the species of depraved digestion occasioned by laxity and atony of the fibres, or paralysis of the nerves, in general, strengthening

remedies are employed with advantage. The chief of which are, orange-peel, bark, and cascarilla; valerian-root, madder, and quassia-wood; acidulous chalybeate waters, as those of Spa, and similar waters; and iron itself, variously prepared, to be used dissolved in a vegetable menstruum by persons of a delicate habit, but reduced to a fine powder by those of a more robust constitution. It is likewise of the greatest service, in paralysis of the stomach, to wash the patient with cold water, to cause him to swim in it, to drop cold water on the epigastrium, to frequently rub his limbs, to make him use exercise in travelling and riding on horseback; and he ought to live in a pure atmosphere. When there is too great a tendency in the meat to corrupt on the stomach, flesh of the firmest texture, as beef, ought to be employed. The acid crudity is best prevented by watery drink, by flesh, particularly that of fowl and game, fish, eggs, and pot-herbs of the cruciform plants. On the other hand, the rancid crudity is opposed by acid and acrescent articles, by vegetable diet, by the legumina and farinacea, by acidulous wine, and by abstinence from flesh, from eggs, and from fatty or oily things.

CHAPTER IV.

CONCERNING NAUSEA AND VOMITING.

44. *Nausea* and *vomiting* appear to differ in degree only. The former generally precedes vomiting, and is a fruitless desire to vomit, frequently accompanied with some effort. The latter, or vomiting, is a violent rejection by the mouth of the contents of the stomach, or its neighbourhood. But, in the same manner as a slight motion of the fibres of the œsophagus and inversion of the stomach occasion nausea, so a more violent one, by frequently drawing the diaphragm and abdominal muscles into a spasmodic contraction, occasions vomiting.

45. The proximate cause of each affection is, a convulsive irritation of the œsophagus, or stomach, or neighbouring parts, of such a kind, however, that the motion is inverted from below upwards. This may be occasioned by all those things which diminish, increase, or vitiate the appetite (27. 28. 29.), or which retard the digestion of the food (39. 40.). Of these some are inherent in the stomach, some are situate out of it, but in such a way as to affect it by connection, sensibility, or consent. The morbid conditions inherent in the stomach, and which excite continued vomiting, are, obstruction, callus, or

scirrhus of the pylorus ; ulceration, abscess, hernia *, or cancer of the stomach ; relaxation and atony of the cardia ; blood distending the vessels of the stomach, or stagnating there ; gastritis † ; a colluvies of vitiated humours, the taking in, and retaining of acrid, poisonous, fatty, and putrid things ; and worms. Those which exist out of the stomach are, external injuries of the head ; wounding of the brain ; any injury of the sensorium commune ; the power of imagination ; irritation of the *par vagum*, pharynx, or larynx ; affections of the liver ‡, pancreas, mesentery, spleen, kidneys, and bladder ; inflammation, swelling, obstruction, strangulation, and spasm of the muscles of the abdomen or intestines ; the motion of a carriage or ship, and the sight of a disagreeable object. P. C. Abilgaard mentions an instance of sympathetic vomiting having been excited in consequence of the application of a ligature to a sarcomatous tumour ||.

* Concerning hernie of the stomach, and their effects, see the note at the end of this chapter, subjoined to par. 52.

† An instance of vomiting being occasioned by this cause, and, in consequence of gangrene supervening, giving rise to death, appears from a case quoted by Baron, in the *Paris transf.* ann. 1748. See also *Com. Lips.* vol. ii. P. i. p. 31.

‡ After the most obstinate vomiting of the ingesta, and of a black and fetid matter, accompanied with bound belly, Lieutaud discovered in the body of an old woman the lesser lobe of the liver excavated, in which a putrid sanies adhering had corroded the stomach, and opened a passage for itself into it. *Hist. anat. med.* i. vol. i. p. 35. || *Collect. soc. med. Haun.* vol. i. p. 176.

46. Hence the varieties of *nausea* and *vomiting* are manifold. For the complaint is either *idiopathic*, or *sympathetic*; *primary*, or *secondary*, and *symptomatic*; as also *periodical*, *frequent*, *salutary*, *critical*, *noxious*, &c. Likewise, according to the nature of the matter ejected, vomiting is divided into *phlegmatic*, *bilious*, *eruginous*; *atrabiliary*, *black*, *verminous*, *stercoraceous*, *bloody*, &c. But it is not uncommon even for blood to be effused into the stomach, and to be thrown up by vomiting, and for this to happen in some of the ways in which other hemorrhages take place. A more frequent cause, however, is an obstruction of the spleen. For the *vasa brevia* being filled with stagnant blood open, and pour their contents into the stomach.

CHOLERA.

47. IF frequent vomiting takes place, while at the same time a purging happens, in consequence of which a copious and violent evacuation from the mouth and anus is occasioned, the complaint is named *cholera*. It is a disease full of danger, and frequently proves fatal in a few days, or even hours. It arises from the cause of the vomiting being propagated likewise to the intestines and other abdominal viscera, or from a spasmodic and inordinate agitation of the stomach and intestines, in consequence of which, whatever is contained in them, or is carried thither, is

violently expelled. Its more frequent remote causes are, the immoderate use of ripe fruits, liquor and food apt to run into fermentation, very acrid bile, acrid purgatives, emetics, and, lastly, some peculiar acrimony generated in the system, or introduced into it. Its attacks are most frequent in the summer-time. It is generally distinguished into *moist* and *dry*. The dry takes place, either when a copious discharge of fluid happens from the anus alone, or mouth, or, contrary to what happens in the humid species, a very sparing general evacuation occurs. It is likewise divided into *spurious* and *true*. In the former, the meat and drink are passed in a state of corruption; in the latter, the bile or other fluids are voided putrid. When it is severe, it is accompanied with fever, although it is described by most authors as having been observed unaccompanied with it.

HICCUP.

48. HICCUP frequently precedes or succeeds to vomiting. At one time, however, it is solitary, at another it supervenes upon other complaints. It may be defined to be, the sudden and excessive interruption of the breath, when very rapidly inspired, in consequence of which it is expelled with such force from the breast, that, striking against the glottis and fauces, it occasions a momentary sound of a peculiar kind. Its chief and proximate cause appears to be, a spasmodic,

troublesome, and violent contraction of the diaphragm, which is so great, that for a moment the bottom of the thorax is drawn in with pain, and violently compresses the lungs. In general, the abdominal muscles also are at the same time convulsed, in consequence of which the thorax being more and more constricted, a more violent expulsion of the air from the lungs takes place. The stomach also, the œsophagus, and the glottis itself, appear to be affected at the same time. Nay, the commencement of the complaint is generally in the stomach itself, and is propagated from thence to other parts.

49. Whatever, therefore, can distract, or sharply irritate the œsophagus, stomach, larynx, and diaphragm, either immediately or remotely, will be liable to occasion hiccup. Of this kind are, large bolusses passing the œsophagus with difficulty, a large draught suddenly taken, too great fulness and distension of the stomach, acrid food, medicine, poison or fluid of any kind taken into the stomach, a violent cough, pus, water, or ichor collected in the cavity of the thorax, irritating the phrenic nerves, or diaphragm; all kinds of convulsive affections of the abdominal viscera, especially of the intestines, and of the bladder; and, lastly, inflammation, wounding, distraction, erosion, and similar affections of the diaphragm itself.

THE DIAGNOSIS AND PROGNOSIS.

50. THE *diagnosis* of all these affections (44. 47. 48.) is easy. Nor is the *prognosis* attended with much difficulty. Immediately previous to vomiting, a more copious flow of saliva takes place; the under lip quivers; the hypochondres become tense; and nausea, with turning of the stomach, occurs. But both nausea and vomiting, when they are occasioned by inconsiderable causes, are free of danger, and *vice versa*. Customary, or critical vomiting, or vomiting of a superfluous, indigestible, putrid aliment or fluid, returning at intervals, is generally salutary. It is likewise useful when it throws off poisons which have been swallowed; if it supervenes upon a looseness; and if neither from the quantity nor quality, or concomitant circumstances, it gives cause for alarm. It is worse if it be pure, or greenish, or bloody, especially when supervening on exanthematic diseases*; or livid, or sanious, or fetid, or stercoraceous, or black. But the worst kind is that which is variously diversified, or when it is followed by convulsions, hiccup, loss of strength, labour, or anxiety; as also that which supervenes on diseases of the head, incarcerated hernia, ileus, and inflammations. That which proceeds from pregnancy, or suppression of the menses, although it be bloody†, does not occasion great danger; nor is that kind always hurtful which is occasioned by congestion of the

spleen, unless it be accompanied with grumous, thick, acrid, or atrabiliary blood.

* See Vol. II. & III. *Concerning the Exanthematic Complaints*, where frequent mention is made of *nausea* and *vomiting*, as symptoms of them.

† The following instance of vomiting of blood and flesh, as being uncommon, and terminating favourably, we have thought proper to transcribe from the author's papers. [*Germ. Editor*].

"A woman, in consequence of long complaining of nausea and loss of appetite, was gently purged. Afterwards, however, she was seized with vomiting, in consequence of which, much blood, with two pieces of flesh, were thrown up. One piece resembled a pike's liver, the other the substance of the lungs, and was very large. Afterwards she was restored to her former health by means of strengthening remedies. See the *Miscel. N. C.* an. vi. obs. xxx. p. 63.

51. The spurious, or dry cholera, is free of danger. But the moist and true species is a very acute, and frequently fatal complaint. It is sometimes resolved by a critical sweat, or by urine voided with heat. Not unfrequently it induces inflammation, gangrene, syncope, or lentergy, and slow fevers. Hiccup, which is alike familiar to children, hypochondriacal and hysterical people, is not so much to be dreaded as that which supervenes upon acute diseases and malignant fevers, ileus, encysted hernia, excessive evacuations, especially hepatitis, *ischuria vesicalis*, and wounds of the stomach and diaphragm. Sneezing when it arises allays hiccup.

THE CURE.

52. THE cure is performed by those remedies which remove the causes. Nausea, vomiting, cholera, and hiccup, are allayed, if the cause of them be in the stomach, œsophagus, or duodenum, by those things which gently promote vomiting; by diluents, demulcents, oily remedies, and clysters; and, lastly, by strengthening remedies, and anodynes containing opium*. Under this head likewise fall, pure wine drunk warm, salt of wormwood mixed with lemon-juice, and other remedies, of whatever kind, which prove agreeable to the stomach, and applied externally also with theriac. If they proceed from other causes, these must be occasionally opposed; or at least the symptoms must be mitigated by proper remedies. Comparett mentions having cured a case of vomiting which happened in the hospital of Padua, ann. 1771, in consequence of a swelling of the pylorus, by employing corrosive sublimate†. Michellott cured a vomiting of blood yielding to no remedies, which happened to a young man during the winter-season, by means of very cold drink‡. The powers of musk, camphor, and opium, in cases of hiccup occasioned by malignant and pernicious vapours affecting the diaphragm and stomach, and likewise the efficacy of an application of cantharides, are now so well known, that it is unnecessary to dwell upon them. When the disease has been removed, the nicest

regimen, with respect to diet, ought to be adopted, that the complaint, as very frequently happens, may not return.

* See, in the following chapter, (par. 70. in the note ††), the observations concerning the anti-emetic virtue of Columbo root, and other remedies for allaying vomiting, mentioned in par. 111.

† *Occurf. med.* p. 343. But Pibraci contends, that many bad consequences are occasioned in the stomach by the use of corrosive sublimate, and that chronic diseases frequently follow its employment (*Mem. de l'acad. de chir.* vol. iv.); although some complaints appear to be occasionally overcome by it. F. C. Medicus seems to entertain the same opinion. See Suppl. ii. ad decad. ii. *Com. Lipsf.* p. 225.

‡ *Com. inst. scient. Bonon.* See, in the *Advers. med. pract.* of Ludwig, P. i. p. 165. an essay entitled *Dissertatio de ratione venesectionis in vomitu cruento laborantibus.*

NOTE.—In conclusion, I shall adduce some remarks taken from the author's papers, relating to vomiting and its effects. "Hildanus mentions a hernia of the stomach, which succeeded to the violent reaching and vomiting occasioned by swallowing an emetic. Garangeot also, in vol. iii. of the *Acad. chir. Par.* relates two histories of a similar hernia, which were probably unjustly called in question by Gunz, in his treatise on *Hernia*, published at Leipzig, an. 1774, while he himself adduces proper instances of this kind of hernia. The symptoms are, a soft swelling in the epigastric region, more or less extensive, which yields and disappears in the supine posture; vomiting and depraved digestion; anxiety; suffocation; a rending sensation; pains; and bound belly. It is preceded by violent blows. On the hernia being replaced, and forcibly retained, the symptoms cease." See likewise Piplet the younger; *Mem. de l'acad. de chir.* vol. xi. p. 294. [*Germ. Editor.*]

CHAPTER V.

CONCERNING LOOSENESS OF THE BOWELS.

53. WE say that the belly is loose when the fæces are frequently passed in a liquid state, and having a different appearance from that which is natural. The chief kinds of looseness are reduced under lientery, cœliac passion, diarrhœa, and dysentery; and, lastly, the bloody fluxes, namely, hemorrhages, the hepatic and black flux. Each of these, therefore, merit a short discussion.

LIENTERY.

54. WHEN the meat and drink, without undergoing digestion or corruption, but in the same crude state in which they have been taken in, scarce at all changed, are passed quickly without pain, or a mixture of blood or bile,—whether the food be liquid or solid,—the affection is named by the Greeks *lientery*, and by the Latins *lævitas intestinorum*. The proximate cause of such a discharge seems to be, weakness of the digestive powers, and too great laxity of the fibres of the pylorus, in consequence of which the mere power of the respiration forces down the food from the stomach undigested. Sometimes, however, the capacity of the pylorus has been observed to be enlarged without lientery *. I am disposed to think, therefore, that in lientery the irritability of the

Stomach and intestines is increased, in consequence of which the ingesta are expelled sooner than their digestion requires. This is proved by the causes preceding lientery (for it is frequently preceded or accompanied by cynorexia), as also by the method of treatment to which it generally yields; for it is frequently cured by the remedies opposed to excessive irritability. I do not deny, however, that sometimes weakness of the stomach, and sluggishness of the digestive fluids, are conjoined with excessive irritability of the intestines †.

* Morgagni, *Epist. anat. med.* xxxi. n. 7.

† Excessive irritability of the intestines is sometimes blamed by Van Swieten, § 719. Vid. *Pro causa vires.*

THE CÆLIAC PASSION.

55. THE *cæliac passion*, or *cæliac flux*, as it is named, differs little from lientery. In it the stools consist of digested food, but are thin and white, in consequence of being interspersed with chyle. The fault is not, therefore, to be referred to the morbid or defective action of the stomach; but its real cause may be considered as being checked absorption of chyle into the lacteals, either from defect of the bile and pancreatic juice, which have not sufficiently attenuated the chyle; or from a fault of the intestines, on account of their being too weak and languid; or from the lacteal vessels having lost their power of absorption, or being closed, obstructed,

or compressed, by a cicatrix, and denying a passage to the chyle. All of which circumstances, as they may take place from a variety of causes, readily appear to a person who is even slightly acquainted with physiology.

DIARRHŒA.

56. As in the alvine discharges mentioned above, it is necessary principally to consider the nature of the matter passed ; so, in the following one, the quantity of it is chiefly attended to. Every frequent, thin, and copious discharge by the belly, whether it consists of putrid and liquid fæces, or the bile, mucus, fat, serum, or all of these be mixed with them, is named *diarrhœa*. It is generally unaccompanied with pain ; sometimes, however, some pain is perceived in the intestines. But, according as one humour is discharged more copiously than the others, it is named, either *bilious*, or *mucous*, or *pinguedinous*, or *serous*, or *aqueous*, and *colliquative*. It is divided also into *critical* and *symptomatic*.

57. Its proximate cause is, too copious an apulse of humours to the intestines, and an increased peristaltic motion, in consequence of which they are not proportionably taken up by the absorbents. The remote causes are, copious drink, whether warm or cold, which is carried neither to the kidneys, nor to the pores of the skin, sufficiently soon ; acrimonies introduced into the system along with the food, drink, air, and medi-

cines, or generated internally by stagnation, dyspepsia, and putrefaction; an accumulation and depravation of the fluid of the stomach*, intestines, pancreas, and liver; suppression of watery excretions of every kind, and of the insensible perspiration; translocations of acrid and vitiated matters to the internal parts of the system; dyscrasy of the whole blood, or unequal distribution of it, and a conflux of it to the internal parts, on account of laxity of the fibres of the intestinal canal; a deranged state of the nerves; emotions of mind, especially anger; difficult dentition; worms; the immoderate use of fruits and fermenting things; unpurified wine; putrid waters†; excessive heat; and acute fevers.

* Sometimes the cause of diarrhœa has been discovered in the stomach itself. See Morgagni, *Epist. anat. med.* xxxi. n. 9. 10.

† Pringle and Hebenstreit affirm this; *Anthropologia forens.* sect. i. c. ii. § 12.

DYSENTERY.

58. WHEN to the loose stools are super-added tormina and frequent pains of the bowels, with a frequent desire of going to stool, while the fæces are very fetid, and frequently small in quantity, intermixed with mucus-like fat, or with blood*, or sometimes even abound with filaments, carunculæ, and thin membranes, such a complaint is named *dysentery*. This complaint was named by Celsus *tormina*. Hence it appears that diarrhœa and dysentery differ in degree only, as in the latter the symp-

toms are much more severe, and the proximate cause, which depends upon some acrimony, affects the sensibility more, proves more irritating, and adheres more firmly to the intestines, velli-cating, corroding, inflaming, and exciting them to action; causing pains, spasms, and dejections; abrading the mucus; expressing the blood from the dilated or lacerated extremities of the vessels; or tearing filaments and membranous parts from the villous coat of the intestines, and forcing them out with the fæces. If the *small intestines* only be affected, the pain is most acute and most excruciating about the umbilicus; the belly is not evacuated immediately after the pains; and the blood is mixed more with the fæces. If the *large intestines* be affected, the pain is more obtuse, not so constant, is more distant from the umbilicus, and immediately followed by stools; and the blood and purulent matter slightly adhere to the excrements, or only float upon them. But it frequently happens that both parts of the intestinal canal are affected, in which case these phenomena are observed to be combined together.

* Although blood be absent, if the other symptoms be present, the disease is dysentery, as Sydenham also observes, sect. iv. c. iii.

59. The remote causes are nearly the same as those of diarrhoea (50.). Among these are to be enumerated, “a hot summer, succeeding to a dry, cold winter, but a rainy, warm spring*.—A dry, cold spring, succeeding to a warm, rainy, mild winter†;” a continuation of dry weather;

excessive heat ; warm climates ; the moist atmosphere of low situations ; sudden and unusual cold ; a choleric or atrabiliary temperament ; and the meridian of life †.

* Hippocr. aph. iii. n. 11. † *Id.* aph. iii. n. 12. ‡ *Id.* n. 30.

60. Besides, dysentery is sometimes *sporadic*, sometimes *epidemic* ; sometimes *acute*, at other times *chronic* ; sometimes *benign*, *malignant*, *contagious*, and confined to camps ; sometimes it is conjoined with tenesmus, sometimes it terminates in it, and sometimes it is free of it. Tenesmus, again, is that troublesome and painful irritation of the rectum, which occasions generally a fruitless and repeated desire of going to stool. It appears to arise from excessive sensibility of the rectum, occasioned by the absence of the mucus, and denudation of the inner coat, in consequence of which, upon the application of any stimulus, it contracts violently, and is drawn, as it were, into a ball, causing the deceptive sensation of a body attempting its passage. Tenesmus may likewise be present without dysentery. For the rectum, when irritated by acrid mucus, by a spasm, by ascarides, by inflammation, by the piles, by calculi in the bladder, and by indurated fæces retained in the intestines, falls into this complaint. But in that case there is only a discharge of mucus tinged with blood, and a prolapsus ani frequently happens ; while the fæces, when voided, preserve their natural form, colour, and condition.

BLOODY FLUX.

61. A BLOODY discharge from the intestines is also pretty frequently mentioned by practitioners, and is said to be present when pure blood, as in hemorrhages, or that which is diluted, or dark coloured, or black, or shining, comes off along with the stools. For, in consequence of the eruption, dilatation, or erosion of the vessels of the stomach, intestines, liver, or pancreas *, frequently a great quantity of blood is poured out, giving rise to a bloody flux from the belly. If the blood be discharged pure, bright, and in large quantity, without symptoms of the hemorrhoids flowing, it is named by Lieutaud *fluxus mesentericus*, but more properly *hemorrhagia intestinalis*. If the blood be more diluted, and like water in which flesh has been washed, it is named by the ancients *fluxus hepaticus*, and by us the *dysenteria hepatica* of Gordon or Ballonius, or the *hepatirrhœa vera* of Sauvages. It is supposed to be carried from the vessels of the liver by the ductus choledochus, when the liver labours under atony and laxity, or any other morbid state, as ulceration or abscess. I will not take upon me to deny the existence of the real hepatic flux, noticed by Lieutaud and Ludwig. But a similar one, and indeed unaccompanied with pain, has been sometimes observed to proceed from the intestines and pancreas, according to the testimony of most moderns, among whom are Riverius, Ettmuller,

Lieutaud, Ludwig, and Sauvages. This flux has been named by Trallianus the *cæliac affection* †. The disease by Celsus named *cæliacus ventriculi morbus* is accompanied with hardness and pain of the abdomen, bound belly, difficult respiration, and flatulency ‡. At length, if the stools become black, fetid, and acrid, and, what is worse, shining, the *fluxus niger*, and *fluxus atrabilaris*, or the *morbus niger* of Hippocrates and Hoffinan, or the *fluxus spleneticus* of Gordon, or the *dysenteria splenetica* of Ballonius, are said to take place. For it generally arises from coagulated, stagnant, putrid, black, acrid blood, sometimes from the rupture, sometimes from the erosion, of the vessels of persons labouring under cancerous ulcers of the stomach, or intestines. And such bloody discharges supervene, especially in scorbutic people, when accustomed evacuations are suppressed; in persons labouring under fevers of a bad kind, both continued and intermitting; in melancholic people, and in those affected with an obstruction of the spleen or liver.

* Boerhaave thinks that this happens when a cathartic is taken by a person labouring under a *scirrhus pancreas*. In consequence of its increasing the circulation, the vessels about the scirrhus are pressed upon, and at length burst. *De virib. medicam.* p. 205.

† L. viii.

‡ L. iv. c. xii.

THE PROGNOSIS.

62. IN *lientery*, and in the *cæliac passion*, the patients derive no benefit from their aliment, but

fall into a bad habit of body, as atrophica, tabes, and dropsy. There is a burning heat in the hypochondres, accompanied with most distressing thirst, and sometimes loathing of food. Sometimes the disease is prolonged, at other times it quickly cuts off the patient. It is more easily removed in early life, if the urine flow copiously, and the body begin to be nourished. It is very difficultly cured in advanced life, especially if it have succeeded to long-continued dysentery, if the mouth be ulcerated, the face red, the belly thin and wrinkled, and if it affect old people long. "In long-continued lientery, cructations supervening for the first time afford a favourable prognostic." Hippocr. aph. vi. n. 1.

63. In every looseness of the belly, the following prognostic of Hippocrates ought to be kept in remembrance: "In derangement of the bowels, and spontaneous vomiting, if natural stools be passed, they are easily borne; otherwise, not*." Celsus, likewise, appositely remarks: "It is frequently a good sign for the belly to continue loose for a day, and when it ceases to do so within seven days; for the body is purged, and the morbid matter advantageously evacuated. But continuance of the complaint is dangerous: for sometimes it occasions tormina and fever, and reduces the strength †." To this place belong other prognostics of Hippocrates. "After a long-continued diarrhœa, spontaneous vomiting supervening removes the disease ‡.—

When patients labouring under ophthalmia are seized with a diarrhœa, it is a favourable symptom ||.—If a violent diarrhœa supervene on a leucophlegmatia, it resolves the disease §.—When patients labouring under fever have become deaf, a discharge of blood from the nose, or a looseness coming on, puts a stop to the disease ¶.—A looseness sometimes removes a pain of the præcordia, legs, and lower parts, suddenly occasioned without fever **. In discharges from the bowels, changes of the fæces taking place are serviceable, if they do not take place for the worse ††.—Persons who labour under a long-continued diarrhœa are not freed from the complaint unless violent pains take place in the feet ‡‡.”

* Aph. ii. sect. i. † Lib. ii. c. x. ‡ Aph. sect. vi. n. 15.
 || Coac. 224. De judic. 83. § Aph. sect. vii. n. 15. and Coac.
 457. 482. ¶ Aph. vi. n. 60. Coac. 210. ** Coac. 294.
 †† Aph. ii. n. 14. ‡‡ De indicat. n. 17.

64. The symptoms which follow are of a more unfavourable kind. “A diarrhœa supervening upon a chronic complaint is unfavourable*.—If a violent diarrhœa occur in pregnancy, it endangers abortion †.” This, however, does not invariably happen; for sometimes during the whole period of pregnancy the belly continues loose without harm, ceasing to continue so on delivery. Hence, as the physician’s aid is exerted in vain, it is to be intrusted to nature ‡. “Very red excrements being passed in a looseness of the belly are bad; it is also very unfavourable when they

are of a palish or whitish green, or frothy, or watery. It is likewise unfavourable when the excrements are small in quantity, glutinous, smooth, and of a pale green. It is a very bad symptom also, when a looseness takes place in comatose affections ||.—When the belly becomes very loose in ardent fever, it threatens death §.—When persons labour under tabes, and their hair falls out, on a diarrhœa supervening they are carried off ¶.—A diarrhœa supervening in tabes is fatal **.—In those who have been long falling off, unaccustomed purging of the belly, rashly induced, and accompanied with a tremulous voice, announce death ††.”

* Aph. v. sect. viii.

† Aph. xxxiv. sect. v.

‡ Scardona (*De morb. mulier.* c. ix. § 5.) very properly observes; “That it has been remarked by Hippocrates, that a pregnant woman labouring under dysentery, if she be to recover from her illness, ought to be relieved, either upon the day of delivery, or shortly after it.” The same are the observations of Schenck and Mauriceau. || *Coac.* 611. § *Coac.* 129. ¶ Aph. xii. sect. v. ** Aph. xiv. sect. v. †† *Coac.* 634. 258.

65. Dysentery is not a slight disease, especially the *malignant* species, which is accompanied with fever, and the *epidemic* one. In it inflammation, or gangrene, often supervenes. Sometimes, likewise, dysentery terminates in ulcers of the intestines. “Dysentery accompanied with thin stools is unfavourable *.—When a bilious vomiting occurs in persons labouring under tenesmus, at the beginning of the complaint, it is a bad symptom †.—Dysenteries which com-

minence with nausea, to which vomiting afterwards
 succeeds, are almost all fatal," as Baglivi observes;
that is, if inflammation be present in the inte-
 stines ‡. "All tormina are bad, if they come on
 with fever, accompanied with various coloured
 fæces, or inflammation of the liver, præcordia, or
 abdomen, or if they be attended with great pain,
 depriving the patient of appetite, and occasioning
 thirst ||.—In dysenteries of long standing, loathing
 of food is an unfavourable symptom, both at
 other times, and when fever supervenes §.—
 If dysentery be occasioned by black bile, it proves
 fatal ¶." For black bile is extremely caustic,
 and quickly occasions gangrene. "If, when a
 person labours under dysentery, carunculæ come
 off, it proves fatal **.—When a person labour-
 ing under obstruction of the spleen is seized
 with dysentery, which terminates in dropsy or
 lientery, he is carried off ††.—Whenever a pa-
 tient labours under most of the bad symptoms, it
 very quickly proves fatal ‡‡.—This disease proves
 fatal chiefly to children between the fifth and
 tenth year; other periods of life run less risk §§."

When the complaint originates from a metastasis,
 it is more dangerous than when it proceeds from
 the ingesta. When the pains suddenly cease, and
 are succeeded by an involuntary discharge of black
 fetid stools, accompanied with loss of strength, a
 small, weak pulse, and other bad symptoms, it
 denotes that the dysentery has terminated in a fa-
 tal gangrene. It is generally a symptom of death,

when the tenesmus is so violent that the sphincter ani continues open, in consequence of which clysters are immediately returned, or when it is so much constricted, that nothing can be admitted. Hiccup supervening upon a diarrhœa or dysentery, or spots breaking out upon the face, or a black pustule behind the ear, are fatal symptoms. When a black pustule breaks out behind the left ear, it is supposed by some that it announces that the fatal event will happen on the twentieth day. Riverius also adds, that œdematous swellings of the hands prove fatal.

* Hippocr. aph. 23. sect. vii. † Coac. 463. ‡ In *Append. ad dysenter.* || Hippocr. *Præd.* ii. n. 118. *Id.* epid. vi. viii. n. 1. § Aph. 24. sect. iv. ¶ Aph. 26. sect. iv. ** Aph. 43. sect. vi. Coac. 466. †† *Id.* *Præd.* ii. n. 118. ‡‡ *Id.* *ib.* n. 119.

66. We draw a favourable conclusion from stools being passed somewhat solid, mixed with fluid, accompanied with a discharge of flatus. "If flatus begins to be discharged, it announces a speedy return of health *.—It is seldom critical and benign: however, when it supervenes on madness, it is favourable †.—Dysentery supervening upon obstruction of the spleen is favourable ‡: as also that which is not of great duration ||.—In general, most hope may be entertained in dysentery when fewest of the bad symptoms are present §."

* Baglivi, *Prax. med.* lib. ii. c. iii. † Hippocr. aph. 5. sect. vii. ‡ *Id.* aph. 48. sect. vi. || Coac. 466. § *Id.* *Præd.* ii. n. 118.

67. Pure bloody stools are liable to the same danger and changes as other hemorrhages; thence the remarks elsewhere delivered may be recalled to mind. The *fluxus hepaticus* generally terminates in dropfy. The *fluxus niger* carries off the patient sometimes by a rapid exhaustion of his strength, and sometimes by a slow consumption. A discharge of black bile upwards or downwards, in whatever diseases it happens, is a fatal symptom *. A discharge of black bile, similar to black blood, taking place in persons whose strength is reduced by acute or chronic diseases, by wounds, or otherwise, indicates that they will die next day †." Nevertheless, instances of persons in such circumstances sometimes recovering are recorded.

* Hippocr. aph. 12. sect. iv.

† *Id.* same sect. aph. 23.

THE CURE.

68. THE cure of these affections ought to be directed first to removing the cause, and next to mitigating the symptoms. In lientery, at the beginning, gentle abstersgents, as whey; oil of olives; the watery tincture of rhubarb; a decoction of tamarinds: then gentle sedatives, astringents, and stomachics, as theriac; the *diascordium Fracasiorii*; terra lemnia and catechu; dragon's blood; bitters; the *vinum mali punici*, and quinces, are proper. These are particularly proper if the disease be occasioned, or kept up, by atony of the system. Children frequently labour under

lientery, owing to their belly being obstructed and swelled with a quantity of phlegm shutting up the mouths of the lacteals; in consequence of which the body becomes emaciated, and all the ingesta escape unchanged. They are cured by means of cathartics, resolving remedies, and stomachics. Myrrh, the *sul lixiviosum*, and *vinum aloeticum* given repeatedly in the course of the day, in a small dose, quickly restore the health*. Nor is any other treatment requisite in the cœliac passion, providing aperients and diuretics be at the same time used. In diarrhœa, and still more in dysentery, at the beginning, before the strength has been reduced, when the patient is of a good habit, and in his prime, if the fever or pains be urgent, it becomes even necessary to repeat the bleeding. When the vessels are emptied, and no symptom of inflammation remains, nor any other disease contra-indicates it, if the matter abounds on the stomach, it must be evacuated by means of an emetic. Nor are there wanting instances of cures performed by emetics, even when no symptoms indicated that any thing remained in the *rimæ viæ* which by its stimulus could excite a diarrhœa. Van Swieten† cured such obstinate diarrhœas, by administering a vomit in the morning for two successive days, afterwards repeating it every other day for three or four times, until they were checked; which astringents could not effect. In the evening, however, succeeding the operation of the emetic,

he administered an opiate. Sydenham † and Pringle employed the same practice. Likewise, from half a grain to two grains of gum-tragacanth, along with the *confectio hyacinthina*, or *diascordium*, is given *per epicrasin* ||. Ipecacuanha is particularly efficacious. The dysenteries succeeding to bilious diarrhœas, which raged at Edinburgh in the year 1731, are said to have been cured by repeated doses of it, and by narcotics, rhubarb, and calomel, which sometimes excited vomiting. Astringents, however, were hurtful, unless when cathartics § had been sufficiently premised ¶. But in the epidemic dysentery which prevailed at London in the year 1762, Sir George Baker contends, that ipecacuanha was an intirely useles remedy; nor did he ascribe much to the opium and rhubarb, unless towards the end of the disease, preferring to the other emetics the *antimonium tartarifatum* **. In the year 1745, during the autumn, an epidemic dysentery likewise prevailed in France, which, according to Du Hamel and Arnald ††, did not yield either to ipecacuanha, simarouba, or other remedies, but was successfully treated by the *vitrum antimonii ceratum*. It is likewise warmly recommended by Sir John Pringle; but Heverman ‡‡ wonders at his having so frequently prescribed it: for he is of opinion, that the *vitrum antimonii ceratum* ought to be considered as an unsafe remedy, on account of his having seen dysenteries aggravated by the wax, which is always dissolved by the fluids and

heat of the stomach. On the contrary, he recommends the bean of the *pechurim* of Brasil, as an anti-dysenteric remedy, by means of which out of thirty he recovered twenty patients. Baeck had already made mention of this remedy |||. After premising emetics and laxatives, he gave to the extent of two scruples of its powder twice a-day, and if the pains required it, he administered an opiate at night. After emetics, the principal rank is held by gentle laxatives, as tamarinds, myrobolans, rhubarb, oil, whey, &c. interposing, especially at night, paretics, of which I have already spoken. The herb *salicaria*, both in decoction and in powder, is recommended by an English physician of the name of Trelkeld §§, for the cure of dysentery. Its efficacy was likewise ascertained by De Haën, in the cure of diarrhoea and dysentery, when the complaint arises from laxity. After premising a cathartic, one dram, or four scruples of the powder are given, morning and evening. Within three or four days the patients are cured,—providing abundance of forces, excessive putrefaction, ulceration of the intestines, or a taint of some of the viscera be absent,—but, in a somewhat longer time, if the complaint become more chronic. A diarrhoea of long standing, which resisted all the remedies employed, was cured in this manner in the space of three weeks ¶¶.

* Gorter, *De fame*, § 42.
tica, &c. † Sect. i. c. iv.

† § 722. Vid. *Expulsu per eme-*
|| Vid. Jurieu in *notis* Bremond.

§ It is necessary, however, to be cautious in the employment of Jalap, which has sometimes proved fatal to dysenteric patients, or persons recovering from dysentery, as may be seen in *Collect. med. soc. Haukien.* vol. i. p. 234. See *Edinb. med. essays*, vol. i.

¶ *De dysenteria et catarrho utrisq. epidem.* an. 1762. Lond. 1764.

** *Hist. de l'acad. roy. des scienc.* an. 1745. The method in which Arnald employed the *vitrum ceratum antimonii*, by which he affirms having cured fifty patients, was as follows: He prepared them with clysters, and afterwards with a laxative: he next caused them to take six or eight grains of the same, with conserve of roses, every other day, administering an anodyne in the evening; and repeated the remedy three or four times. And he at length finished the cure, when the pains remained, by means of a gentle opiate. †† *Com.*

de reb. in scient. nat. et. med. gest. vol. xv. p. 303. †† *Ibid.* vol. x. p. 198. and vol. xiv. p. 516. ||| *Cap. de diarrhœa et dysenter.*

§§ *Gazzet. de Oltremonti*, n. viii. ¶¶ *Rat. med.* P. iii. c. v. p. 214. and P. iv. c. vii. See the method of cure of diarrhœas spoken of so repeatedly by the author, in the first and second volumes. [*Germ. Edit.*].

69. It is likewise very advantageous to throw up frequent injections, at first of the abstergent kind, next anodyne and sedative, and, lastly, balsamic and strengthening. Such are those which are composed of whey and barley-water, with honey of roses; of the soup of calves feet or tripe; of milk, and the yolk of an egg; or of the yolk of an egg dissolved in a little turpentine; or with the addition of theriac, diascordium, or the *philonium Romanum*; or a decoction of the root of comfrey, bistort, or tormentil; and the like. Emollient and relaxing things must be applied to the belly; and, lastly, those things which strengthen the stomach and intestines. Blisters also have been very frequently found by Hamilton * exceedingly efficacious in the cure of a chronic diar-

rhœa, by directing the fomes of the disease elsewhere †.

* *De febr. miliar. c. vii.* † We read of chronic diarrhœas and dysenteries, of several years standing, having been cured in consequence of the suppuration of wounds accidentally received by the patients labouring under them. Probably this happens in consequence of the morbid virus, by which the dysentery is kept up, being drawn out of the system by such suppuration. See *Journ. de med. de Par.* April, 1756, vol. iv. p. 369. Mention is likewise there made of a person having been freed from an habitual diarrhœa, in consequence of a suppuration of the glands of the neck.

70. In the case of serous and putrid stools, if they be at the same conjoined with atony, astringents are the proper remedy. The bark of the simarouba, brought from America about the beginning of the eighteenth century*, is mentioned among these; and it is given, either reduced to a very fine powder, and infused in water †, or a watery decoction of it is employed ‡. Likewise the bark of the *connessus*, *pocgereba* ||, cascarilla §, peruvian bark, and tormentil-root, are employed with the same view. Lopez's root ¶ appears to Gaubius to be preferable to the simarouba **. Columbo root is at present held in great estimation ††. Unripe medlars, taken in great quantity, are celebrated by Van Swieten ‡‡; as the seeds are recommended by Valeriola and Forest. Fothergill describes a new kind of astringent gum brought from Africa |||; and recommends it as an excellent medicine in the cure of long-standing diarrhœas, fluor albus, excessive alvine fluxes, and, in general, in the cure of laxity and acri-

mony of all kinds §§. With the same view are recommended, blood-stone, tincture of red roses ¶¶, and corals, acids and opiates. In this manner lime-water, employed according to the method of Burletus***, is considered as useful in dysentery. A pound and a half of this water, with a third part of milk, drunk every day, has been known to alleviate a long-continued dysentery, which was afterwards cured by three pounds taken daily, for the space of three weeks †††. But Heverman, in a particular epidemy which prevailed among the soldiers at Copenhagen in the year 1757, at Rendzburg in the year 1759, and at Kellenusa in the year 1761, employed it mixed with milk to no purpose; nor did any better success attend the *cortex mangostanæ* and *cortex poggeræbæ* †††. But if the dysentery arise from acidity of the *primæ viæ*, as from sour and unripe fruits; from acid wine and milk, and similar causes; absorbents ought then to be employed. Hence Hamilton |||| so warmly recommends powder of mother-of-pearl, crabs eyes, and calcined hartshorn; and Van Swieten the *terræ bolares* §§§. But if the acid proceed from excessive fermentation of the above-mentioned vegetables, mineral acids must be employed, which check the violence of the fermentation, and fix the evolved air. But when the disease is of a putrid nature, there is then more room for the employment of these acids, both to correct and eva-

cuates the putrid colluvies, and to gently stimulate and strengthen the vessels and intestines ¶¶¶. The drink ought to be, particularly, chalybeate waters; nor will the acidulous waters prepared with iron, which I have elsewhere mentioned, be of less service. Likewise weak soups, prepared with citron or lemon juice; gum-arabic dissolved in water ****; decoctions of barley, either in its crude state, or gently toasted; of rice, of the common millet ††††, of marshmallow-root, or of faleb; in place of which may be substituted, the *orchis-root* of Linnæus, on account of its *gelatinous parts* ††††, that of grass and saxifrage. Quarin ||||| informs us, that equal benefit may be derived from an infusion of the dried flowers of wild poppy and elder.

* *Edin. med. essays*, vol. i. See also Barbeyrac, p. 101. † *Com. liter. Norimb.* p. 388. 389. an. 1732, from the work entitled *Voyage du chev. des Marchais en Guinée*. &c. ‡ *Edin. med. essays*, l. c. and Barbeyrac, l. c.; besides whom ought to be consulted Degener (*De simaroub. dissert.*) and the *Æt. phys. med. N. C.* vol. v. in the *Append. Bremond. adnot. in transact. Anglic.* an. 1732, p. 158. et seqq.: as also the ingenious work of Lambsma, entitled, *Ventris fluxus multiplex*, &c. || *Com. de reb. in scient. nat. et med. gest.*

p. 143. This bark, which is brought from America, acts like a specific in the *hepatic flux*, in *diarrhæa*, and *dysentery*. § Scardona, l. iii. p. 39. who mentions that it is excellently combined with alexipharmacs, as bezoardic remedies, tormentil-root, &c.

¶ It is the root of a particular tree, which grows indigenous at Goa and Malacca, and is employed by the Indians in alvine fluxes.

** *Advers. med.* p. 78. †† So early as the year 1686, Redi, writing to Kircher, classes the Colombo-root among the alexipharmac remedies; but is of opinion, that new experiments ought to be instituted to establish its efficacy. Its name is derived from *Colombo*, a city of the East Indies. Percival (*Experiments and ob-*

(*irrovations on the Colombo-root*), in consequence of a variety of experiments which he had made, assures us that it produces wonderful effects, not only in the cure of *diarrhœa* and *dysentery*, but also in that of *cholera morbus*, in morbid states of the *bile*, and in pains of the intestines. Which is affirmed likewise by Jolinson. Before employing it, however, to allay *vomiting*, he used to premise some medicine calculated for evacuating the bile; after which he gave every third, or every quarter of an hour, two drams of the powder of this root. At the beginning of the diarrhœa, he says that it acted as an antispasmodic, but that towards the end of the complaint it produced its good effects by its tonic, alexipharmac, and antiseptic virtue. He likewise mentions, that fifteen or twenty grains of the powder, adding an equal or double dose of vitriolated tartar, produced wonderful effects in bilious fevers, and turned out equally well in allaying vomiting in pregnancy. In a word, he affirms, that it corrects crudities of the stomach, and morbid conditions of the bile; that it strengthens the stomach itself, improves the appetite, and removes nausea and flatus. From the *Adversaria* of the author, who likewise makes mention of this root in vol. ii. par. 495. 496. See also *Raccolta di opusc. fisic. med. de Luigi Targioni*, vol. v. §§ 722.

||| It is a particular gum, hard, brittle, of a deep red, almost approaching to black, except the smaller fragments of it, which resemble in colour and pellucidity the red amythist; it is named *gum-lino*. It is inodorous, and of an austere taste, and excites in the mouth the sensation of mucus, as it were, and is soluble in six or seven times its weight of water. It differs, by its extreme fragility, from *gum Senegal*, and by its styptic taste, and its property of dissolving in water, from the *dragon's blood* of the shops.

§§ *Ibid.* ¶¶ Huxham, *De aer. et morb. epid.* vol. ii. p. 99. 105.
 *** *Mem. dell' accad. di Parigi.* vol. ix. an. 1700. ††† *Edin. med. essays*, and *Com. Lips. de reb. in scient. nat. et med. gest.* vol. ii. par. i. p. 84. ††† *Ibid. Com. Lips.* |||| *De prax. regul.* c. iii. p. 26. §§§ *Sect.* 88. n. 5. ¶¶¶ Farr, *De acidior. virib.* p. 128. See likewise Lambfma, where he shews that the vitriolic acid, the use of which has been greatly recommended by Boerhaave in the dysenteries of soldiers, is preferable to the other acids as an antiseptic. See also the paragraphs quoted above, 33. 42. and 43. *** *Com. Lips.* vol. ii. p. 639. Wax also,

like gum-arabic, may be mixed with water. Let the wax be dissolved in spirit of wine before the fire ; afterwards let the spirit of wine be filtered. Let half a dram of this wax be mixed with a dram of the mucilage of gum-arabic, and let it be dissolved in an ounce and an half of water. In like manner spermaceti, bruised down with the mucilage of gum-arabic, is mixed with water. Targioni, *Opusc. physc. med.* vol. v. p. 9. †††† Kramer, *Commerc. litt. Norimb.* ann. 1733, hebdom. vi. § 3. See also the *Edin. med. essays*, vol. ii. p. 481. †††† Quarin, *Method. med. feb.* an. 1772, p. 33. ¶¶¶¶ *Id. ib.*

71. The remedies which are calculated for the removal of dysentery, are likewise best adapted to the cure of tenesmus. The chief of them are, injections of milk, and mucilaginous substances, to which may be conveniently added, diascordium or theriac * ; fomentations of a decoction of the flowers of mullein, chamomile, elder, and of the heads of white poppy ; liniments of fresh butter, or of the oil expressed from cacao ; the vapours of vinegar poured upon a hot plate, and the like. The remaining remedies ought to be adapted to the variety and nature of the causes. Not a few of those already mentioned (69. 70.) cure bloody fluxes, but especially those which I have elsewhere recommended, as being calculated for stopping hemorrhages †. Such are, plantain, tormentil, myrtle, roses, quinces, corals, bloodstone, and preparations of these, particularly Helvetius's tincture of corals, laudanum, tincture of roses ‡, and the other astringents already mentioned in the preceding paragraph. But nothing is more efficacious than exhibiting the mineral acids internally and largely ||. With respect to

the diet, it ought to be slight, and of a fluid, bland, gentle, demulcent, gelatinous, acescent, and not easily corruptible kind. It is necessary also, in a state of convalescence, to abstain from cathartics. I have already adduced an instance from the collection of the Medical Society of Copenhagen, vol. i. p. 234. of death having been occasioned by jalap.

* Huxham, *De aer. et morb. epid.* vol. ii. p. 99. 105. † Huxham, l. c. ‡ Scardona, *De morb. mulier.* c. iii. § 15. || *De febr.* lib. iv. c. viii. § 29. and Farr, *Tentam. de acidor. virib.* p. 137. (See also the passages quoted from vol. ii. where also the formulæ of the *serum aluminosum*, and of the specific of Helvetius, are to be found. But when the fossil acids are to be administered with caution, is pointed out chiefly by the author in par. 295. of Vol. I. following the opinion of Boissieu, mentioned in the note subjoined there.

CHAPTER VI.

CONCERNING PAIN OF THE STOMACH, OR GASTRODYNIA AND GASTRITIS.

72. BEFORE proceeding to the remaining diseases of the intestines, we must return to the commencement of them, as it were, namely, the stomach, from which we have somewhat departed; for it, like other parts of the body endowed with sensation, is also liable to pain. If its left orifice, which is supposed to be more sensible, be affected with a smart pain, the complaint

is named *cardialgia*. It is very difficult, however, of so many parts lying under the epigastrium, to ascertain which is principally affected; nor can the patients themselves, for the most part, sufficiently distinctly point out the seat of the pain: and it does not appear certain that the other parts of the stomach may not be endowed with exquisite sensibility, and affected with the most acute pain. Whatever kind of pain, therefore, affects the stomach, and, by drawing the heart into consent, occasions fainting, it appears better to comprehend it under the name of *cardialgia*, in which respect we have the concurrence of Sauvages.

73. But if the pain either be not great, or not at all accompanied with fainting, in general it is named *gastrodynïa*, or distinguished by the generic name of *pain of the stomach*. If, however, it rather resembles an uneasy sensation of burning, it is likewise very properly named *ardor ventriculi*, or *soda*; although this last be generally confounded with acid crudity of the stomach, concerning which we have already treated (38. to 40.).

74. There is also another distressing and troublesome sensation of the stomach, nearly allied to pain, or frequently even conjoined with it, which is named *anxiety*; namely, when the patients are affected in such a manner, about the region of the stomach, that they cannot remain in one place, constantly shifting their posture, and heaving deep sighs. This species of anxiety, how-

ever, is not to be confounded with those anxieties which ought to be ascribed to faulty conditions of the præcordia, uterus, or system of the *vena portarum*; as it seems rather to arise from an extensive spasm of the stomach alone.

75. The proximate cause of these affections is the same, namely, such a change or derangement of the sentient parts of the stomach, as excites in the *sensorium commune* the idea of a pain, sometimes sharp, sometimes dull, or a sense of anxiety. This sensation is occasioned by whatever presses upon, distracts, lacerates, divides, punctures, or irritates these parts, as I have elsewhere pointed out (27. to 29.). Under this head come, acid, acrid, or corrupted humours, either secreted in the stomach, or flowing into it, or generated there; flatus; worms; the swallowing of improper and noxious things, or such as are apt to corrupt; poisons; emetics; powerful cathartics; violent anger; aromatic condiments; fermented liquors; cold water drunk when the body is warm; too great fulness of the stomach; an ulcer; a cancer, tumour, abscess, or spasm, or congestion of the blood in its vessels; metastases; bad kinds of fevers; and likewise diseases of the pancreas and neighbouring parts, and especially depression of the ensiform cartilage, or its being luxated towards the inside.

76. But the most frequent cause of that pain (27.) is inflammation of the stomach, which is

named *gastritis*. The causes from which it arises are such as are in common to every kind of inflammation, and most of those already mentioned (75.). When, therefore, it depends upon inflammation, a constant, violent, burning and throbbing pain affects the epigastrium, scrobiculus cordis, or left hypochondre,—especially near the false ribs,—frequently stretching all the way to the back. The epigastric region is greatly swelled, and painful to the touch; while all these symptoms are conjoined with a very acute fever, and a hard contracted pulse, sometimes small, sometimes great and violent. The deglutition itself, sometimes even the eructation, is checked; the patient is parched with thirst and heat; the ingesta are thrown off, with vomiting which can scarce be allayed; and the pain, in consequence of these shocks, is rendered more intense. To these symptoms are added, on account of the consent between the cardia and the heart itself, and its connection with the diaphragm and other parts, fainting; anxiety; frequent hiccup; difficult, frequent, short respiration; the *facies Hippocratica*; convulsions; delirium; fetid breath; and other very alarming symptoms. But when the internal parts are affected with a violent sensation of burning, while the surface of the body feels cold,—which is said to happen principally in violent erysipelatous inflammation,—the fever is then distinguished by some by the peculiar name of *lipytia*.

THE DIAGNOSIS.

77. THE symptoms peculiar to each kind of pain are easily discovered on examination. But every pain of the stomach does not commence and afflict the patient in the same manner. In some it is more acute, which is ascribed by practitioners to the bile, or some acrid cause. In others the pain immediately succeeds to eating; and this may take place, either in consequence of excessive sensibility of the stomach, or spasm, or difficult deglutition, or from acrid fluids attracted too copiously to it, or from their being raised up to the cardia. In some it is aggravated while the food is digesting, and particularly about six hours after meal-times; which indicates that the mass of food is undergoing a morbid fermentation, rarefaction, or corruption. At times the pain is felt during sleep; which seems to arise from the remains of the food being corrupted or accumulated at that time, or from acrid, bilious, and acid fluids, flowing back from the duodenum into the stomach; or from the air being more copiously extricated in it, entering into, or shut up in it, and expanded by the heat. Sometimes the pain is oppressive, pointing out sluggishness and thickness of the fluids; at other times it is accompanied with heat, and a taste of acidity, as in the *soda*; at other times it is tensive, as if occasioned by flatus. At times it occasions fainting, and then the cardia is supposed to be chiefly affected,

on account of the remarkable plexus of nerves with which it is provided, and the communication which they appear to have with the nerves of the heart. Occasionally it is accompanied with a sense of gnawing, and then it arises from ulceration, or worms, or with a sense of twisting and constriction, which is frequently propagated to the fauces, in which case it is occasioned by convulsion. Sometimes the whole body is convulsed, the extremities become cold, and the head is affected with vertigo and pain : all of which effects are derived from the action and sensibility of the nerves. Lastly, the pain of *cardialgia* is usually distinguished into *bilious*, *flatulent*, *convulsive*, *phlegmatic*, *inflammatory*, *idiopathic*, *sympathetic*, *continual*, *periodical*, and so forth.

78. Nor is the pain always confined to the stomach alone ; for it stretches from the epigastrium to the back, scapulæ, and œsophagus, or even descends downwards. Likewise the *cardialgia* may be readily taken for colic pain ; or that colic pain which occupies the part of the colon lying under the stomach, may, on the other hand, be taken for *cardialgia*. But the distinction consists in this, that in *cardialgia* the pain stretches to the thorax, while in *colic* it passes to the umbilicus and kidneys. But who, from a consideration of the seat of the pain, can always depend upon ascertaining the part affected ? For the stomach has sometimes been discovered on dissection to be moved from its situation, or by its weight

forced down to the lower part of the belly. We are prevented from confounding gastritis with that species of hepatitis which affects the concave surface, or left lobe of the liver, by the severity of the symptoms, and the deeper seated pain, which takes place in it. It differs also from inflammation of the recti muscles, by all the symptoms in the latter being milder, and the pain being situate more externally. Gastritis is distinguished likewise from both these affections, as also from inflammation of the diaphragm, by the remarkable pain which takes place in the former, when either food or medicines are taken into the stomach. Lastly, other pains are easily distinguished from it by the absence of an acute fever, unless it happen to be conjoined with them in consequence of inflammation supervening.

THE PROGNOSIS.

79. A slight and convulsive pain of the stomach is almost void of danger. But if it be of long standing, or severe symptoms supervene, it is not without risk. Cardialgia, when it is accompanied with a continued fever, and great pain about the stomach, or when it supervenes upon malignant fevers, both continued and intermitting, puts on the appearance of a very acute and dangerous disease. For it is either the effect of inflammation, which is always very dangerous, or threatens to pass into it. Patients attacked with it sometimes expire within twenty-four hours,

because the inflammation generally terminates in gangrene and sphacelus. That this has already taken place is indicated by the pulse becoming small, weak, and very quick, and, while the other symptoms do not abate, by the ceasing of the pain, and very great anxiety succeeding to it.

THE CURE.

80. IN attempting the cure of the complaint, it is necessary to remove the efficient cause of the pains (75. 76.), to allay the irritation, and, if any inflammation be present, or be apprehended, to resolve, or prevent it. The cause, if it be inherent in the stomach or duodenum, but of such a nature as to admit being removed, is overcome by vomiting or purging. Oil of sweet almonds, or lint-feed, or olive oil, is best adapted, both to excite vomiting and to open the bowels, providing it be drunk copiously*. Injections also are very useful, and likewise fomentations of an emollient and relaxing kind, applied externally. If any acrimony occasion the complaint, it ought to be corrected by watery, demulcent, and mucilaginous drink; if it be of an *alkaline* nature, *acids* are to be employed †; if of an *acid* kind, *bitters*, *alkaline* remedies, and *absorbents*; if it be tenacious or viscid, incisive, attenuant remedies, and neutral salts; and if a *spasm*, or *flatus*, occasion the complaint, it ought to be allayed and discussed by opium, theriac, diascordium, the *philonium*

Romanum, castor, and carminatives. Chamomile is almost universally employed, from which a decoction, distilled oil, and water, are prepared. It proves emollient, discusses flatulency, allays spasms, and proves gently strengthening, without occasioning irritation.

* I remember that I myself, not many years ago, was quickly freed from a severe *cardialgia* by five ounces of the oil of sweet almonds, taken at a draught; after the pain had received no relief from laxatives, emollients, acidulous waters, venesection, and other remedies, both internal and external. [*Germ. Editor.*]

† See Vol. I. p. 216. and elsewhere, where the author proposes many remedies, celebrated by modern writers in the cure of *cardialgia*. See also Chap. III. of this volume, concerning *Morbid Digestion*. [*Germ. Editor.*]

§1. When plethora, or the suppression of any evacuation, or an acute fever, or gastritis, accompanies *cardialgia*, blood must immediately be drawn, and repeated, from the arm, foot, or from the hemorrhoidal veins, as far as may appear necessary, or the strength can bear. If the complaint be a symptom of intermitting fever *, the fever ought to be cured by the usual remedies, particularly by the peruvian bark. Worms ought to be opposed by the anthelmintics enumerated in Chap. X. which follows. The replacing of the ensiform cartilage, when luxated, may be attempted by the application of a dry cupping-glass. The cure of the other causes is to be taken each from its proper place. The food ought to be very slight, bland, and fluid. Lastly, by way of prophylaxis, whey, milk, medica-

ted waters, the bath, deobstruents, diaphoretic decoctions, sweeteners, and principally chalybeates, may be employed.

* It is likewise a symptom of other fevers and diseases. See par. 11. Vol. I. and likewise par. 216.

CHAPTER VII.

CONCERNING PAINS OF THE INTESTINES, AND OTHER PARTS OF THE ABDOMEN.

82. PAIN of the intestines (for they also are very frequently liable to be affected with pain) is usually divided into *colic* and *iliac* pain, or into that which affects the *colon*, and that which affects the *ilium*. For the intestines were divided by the ancients into these two parts only. It is an opinion universally prevalent, that both pains are distinguished not only by the diversity and seat of the pain, but also by its intensity. For most physicians affirm, that the colic pain follows the course of the colon, and that the iliac pain occupies the region of the ilium; and, moreover, that the iliac is more severe than the colic pain, because the small intestines appear to be more copiously provided with nerves, and therefore to be endowed with greater sensibility than the large intestines. They likewise add, that in the colic pain, vomiting is not present, or at least that it is more distressing, and more constantly present in the iliac pain.

* Pliny the younger (lib. xxvi. c. i. *Hist. natur.*) writes, that the *colon*, or *colic* pain, is a new disease, and that it appeared during the reign of Tiberius Cæsar, who was first of all attacked with it. Sennert (*Med. pract.* l. iii. P. ii. sect. ii. c. ii. quæst. 1.), and after him Tronchinus (*De colic. picton.* c. i.) accuses the passage of Pliny as being false, and shews that Cassius, the contemporary of Celsus and Themison, who flourished under Augustus, and Philo of Tartarus, who lived at the same time with Themison, spoke of the *colic* pain. Probably, however, Pliny might be excused, or pardoned, if it were to be understood that he wrote concerning a particular species of *colic* pain, which then first appeared to rage epidemically: and this opinion appears more probable, as I will shew hereafter.

83. It is to be observed, however, that no certain conclusion can be drawn merely from the seat which the intestines naturally occupy; as anatomical dissection has more than once demonstrated, that the position of all the intestines, especially that of the *colon*, varies in different ways. For sometimes the *colon*, from its very beginning, has been found to occupy a wrong situation; sometimes it is forced downwards by the stomach, liver, and spleen, being unusually enlarged; sometimes being filled and distended with fæces, it is depressed almost by its own weight towards the hypogastrium; or, on the other hand, being expanded with flatus, or air, and rendered tympanitic, it is raised up, occupying a higher situation: on which account it is sometimes found about the umbilicus, sometimes thrust lower down, with various singular contortions, sometimes forcibly elevated towards the false ribs*. But nothing is more apt to derange, or more fre-

quently deranges, the seat of the colon, and forces it to the middle of the abdomen, than the absurd practice of binding the sides, and small of the back, which women attempt by stays, that they may appear more slender and neat in the waist, as is very frequently discovered on dissection.

* Morgagni (*Epist. anat. med.* xxxiv. n. 2. 3.), Bonetus (*Se-pulchret. anat. scol. ad observ.* 41.), and Lieutaud (*Hist. anat. med.* lib. i. art. xxvii.), who, from Ballonius, quotes an instance of the colon having been observed to be protruded through a hole in the diaphragm, into the cavity of the thorax; and another from the *Miscel. nat. curios.* in which the part of the colon next the stomach is said to have adhered above the diaphragm.

84. Likewise the small intestines are sometimes forced from their natural situation, towards different parts. This happens especially in consequence of gravid uterus; ascites; encysted dropfy; herniæ; from tumours of the mesentery, omentum, ovaria, of the uterus and its tubes, and other parts of the abdomen; in consequence of increased bulk of the liver, pancreas, spleen, or kidneys; and from the stomach being enormously dilated, and falling down; from all of which, the intestines also, especially the small intestines, being forced into various parts, change their situation. For they are mentioned by Morgagni as having been drawn up, and uniting together, and likewise forced down to the bottom of the abdomen*. The same author likewise mentions the symptoms by which this can be discovered when it happens†. Bartholin‡ has seen all of the intestines accumulated in the right

Hypochondre ; and Laub has observed them collected at the umbilicus ||, while Columbus has observed them gathered at the hypochondria §.

* *Epist. anat. med.* xxxix. art. 28. to 30.

† Morgagni has the following observations : “ In a body which is neither corpulent, nor much emaciated, nor hydropic, and which does not labour under the suspicion of dilatation of the *aorta descendens*, or of increased pulsation of it there from other causes, if the pulsation be natural, and, much more still, if the hardness which the vertebræ exhibit, be perceived ; it may be conjectured that the intestines are drawn up ; and our suspicion will receive no small confirmation, if the abdomen, below the umbilicus, appear to be too much flattened, while above it it is unusually hard. But if, along with these symptoms in the superior region, a peculiar and moveable swelling appear, we must not only take care not to hastily refer it, on account of its resistance, and the inequality of its surface, to scirrhus, or strumous tumours, but likewise we must inquire by what farther symptoms we may be induced to conjecture that it is occasioned by the intestines. These symptoms will be, if we understand that the patient has been often liable to pains of the small intestines, and to a discharge of blood from the hemorrhoidal veins,—although it may have afterwards been diminished or suppressed ;—if the tumour be accompanied with pain, and troublesome flatulency ; if the belly become more and more bound after the first appearance of the tumours ; and similar symptoms, which are either related in the history adduced by us, or which may be suggested by the perusal of it. These particular symptoms would be, if the tumour were felt by the patient sometimes more severe or slight, and by the physician harder or greater, or softer and smaller, as takes place in hernie of the intestines. And altho’ this appears to happen rarely in this swelling, on account of the very frequent fluxes, the considerable constriction, and especially the very close adhesion of the intestines to one another, obstructing the free peristaltic motion of them ;—which causes retain the matter, in consequence of which, as we have seen, the resistance is occasioned :—still it is probable, that if such an inquiry were repeated carefully, frequently, and at different times, especially after nothing for a considerable time having been passed, or when an unusual quantity is discharged, or when the patient is more

or less troubled with flatulency ;—it is probable, I say, that some of these symptoms might in some measure be discovered.”

‡ Cent. i. *Hist. anat.* ii. || *Ephem. N. C.* cent. 9. obs. 64.

§ *De re anat.* l. xv. Whoever wishes for farther information concerning displacements of the colon, and other intestines and viscera, from their natural situation, may consult De Haen's *Rat. med.* P. x. c. i. tab. 1. to 4. and P. xi. c. iii. iv. tab. 1. to 4.

85. Nor does the severity of the pain argue that it is a colic one, as, since the time of Galen to the present day, it has been ascertained by medical histories, that sometimes colic, sometimes iliac pains, are attended with such severity, that neither of them can be said to surpass the other. Nor is it altogether true, that when the colon is affected, vomiting is always absent, or less constantly present, and not so severe as in the iliac pain ; for frequently I have observed very violent and constant vomiting excited in people endowed with much sensibility, in consequence of a colic pain, particularly when that part of the colon which lies transversely under the stomach is affected. Since, therefore, neither the part affected with the pain, nor the degree of it, nor the presence or absence of vomiting, of themselves certainly point out the part affected ; and as several other parts contiguous to the intestines, or lying between and below them, are contained in the abdomen, on account of which the difficulty of the diagnosis is increased, we must not trust to one or two symptoms, but all must be maturely weighed ; and, from the concurrence of several of them, we may conjecture whether one

part be affected more than another, as will be exemplified afterwards. To avoid these difficulties, physicians comprehend every pain of the abdomen or intestines, providing it be violent and severe,—for slighter pains are named *tormina*,—under the generic name of *colic*, and according to the variety of the causes from which it proceeds, they establish a good many varieties, each of which are to be distinguished by its peculiar marks, as will appear in the sequel.

86. With respect to the causes, it is obvious that these must not be dissimilar to such as I have enumerated in par. 75. and that, according to the diversity of them, a pain, sometimes greater, sometimes less, and of different nature, is excited. The chief of these are, flatus; vitiated, or abundant bile; various kinds of phlegm, namely,—to speak in the language, and according to the doctrine of the ancients,—*vitreous*, *viscid*, acid, and *salt*; indurated or accumulated feces sticking any where; stony concretions growing to the intestines; hard, sharp bodies, as coins, needles, bones, cherry-stones, those of prunes and other fruits, and similar things swallowed and not passed by stool, but remaining in some of the convolutions of the intestines, or fixed somewhere, or obstructing the passage; various kinds of worms, as *tæniæ*; spasm; convulsions; congestions of blood; suppression of the hemorrhoidal flux; swellings of the intestines, scirrhus, cancer, ul-

cers, conglomerations *, and other morbid conditions of them or the neighbouring viscera; the the matter of gout, rheumatism, herpes, scurvy, and scabies, being repelled; the perspirable matter being retained, and passing to the intestines; pus poured into the cavity of the abdomen, and proving hurtful to the intestines by its acrimony; bile in like manner discharged suddenly, in consequence of the gall-bladder bursting, and irritating the intestines externally; fevers, both of the intermitting and continued kind, being imperfectly resolved, or their fomes proving particularly injurious to the abdominal viscera; the catching of cold; the imprudent exposure of the feet to cold; aliment which is of itself hurtful, or not well digested; the drinking of fermenting substances, as of new wine, of beer which is not purified, and the like; the eating of particular kinds of mushrooms; retention of the meconium, or the milk becoming acid or coagulated in infants; and, lastly, *enteritis* itself, or inflammation of the bowels, which is by some named *chor-dapsus*, *iliac-passion*, or *ileus* †.

* Besides the conglomerations of the intestines, which I have already pointed out (84.), that one which is described by Columbus, and which arose in consequence of the last convolutions of the ilium being entwined together, and forming a tumour in the hypogastrium, is deserving of notice. I myself have seen a similar kind of tumour in a woman who had been long afflicted with a chronic colic, and was at length cut off in consequence of a marasmus induced by it. Morgagni (*Epist. anat. med.* xxxix. n. 29. 30.) also adduces an instance of a similar tumour, which arose after ascites,

likewise in the lower part of the abdomen, in consequence of the intestines being entwined together, and having acquired almost cartilaginous hardness. In the same epistle a description is given of a hard and circumscribed swelling in the lower part of the epigastrium, which was occasioned intirely by the retraction and conglomeration of the small intestines. Likewise instances of the intestines, together with the mesentery, being convoluted together, as it were, into a ball, and adhering very firmly, may be read in the *Act. acad. N. C.* vol. i. obs. 87. and vol. vi. obs. 124. Fantoni; *Colicæ*. epist. 4. Bonetus, sect. 21. obs. 3. § 8. To which I myself might add not a few other instances. [Germ. Editor.]

† Hippocrates himself appears to have employed the word *ileus* in this very sense, when he observes: "Vomiting, or hiccup, or convulsions, or delirium, proceeding from *ileus*, are bad;" aph. 10. sect. 7. For by the word *ileus* had he understood, not enteritis, but *volvulus*, as it is called, he could not have mentioned vomiting as a bad symptom, as *volvulus*, in its nature, takes in vomiting; nor can it exist without it. But it appears more clearly that Hippocrates spoke concerning inflammation, or enteritis, in the book *De effeâ.* xxii. § 5. where these words occur: "When *ileus* attacks a person, the belly becomes hard, and passes nothing; and all the lower parts of the bowels are affected with pain, and fever and thirst are present; sometimes, however, on account of the pain, likewise vomiting of bile takes place." But in *volvulus* the excrements, not bile, are thrown off by vomiting. [Germ. Editor.]

87. Hence flow the varieties of colics which are most frequently mentioned by physicians, namely, the *colica*, *flatulenta*, *biliosa*, *pituitosa*, *stercoralis*, *calculosa*, *verminosa*, *spastica*, and *convulsiva*, *sanguinea*, *hæmorrhoidalis*, *catamenialis*, *arthritica*, *scorbutica*, *metastatica*, *accidentalis*, from substances swallowed, or from cold, *inflammatoria*, and so forth. Besides these varieties, however, which the more evident causes of the disease occasion,

there are others which may be reckoned in common, as the primary, secondary, symptomatic, periodical, chronic, endemic, epidemic, &c. The periodical species frequently originate from the fomes of intermitting fevers, and generally supervene as a symptom upon the accessions. The chronic species * is for the most part occasioned by organic injuries, which prove obstinate and hard to remove, such as have been already mentioned in par. 84. and 86. ; as the endemic and epidemic species are occasioned by certain common causes which are more or less diffused.

* Hoffman observes : “ Besides pains of the intestines, which are of an acute kind, and terminate in health or death in a short time, others likewise occur, which are of a chronic kind, continuing for a greater length of time, and distressing the patient for many weeks, or even for a twelvemonth ; although at intervals they have their remissions and exacerbations. After death the cause of these has been discovered to consist in the narrowness, constriction, scirrhus, or callus, of some part of the intestines,” &c. Sect. ii. c. v. p. 180. *De intestin. dolor.* Holler (lib. i. c. xli. *De morb. intern.*) and Rhodius (cent. ii. obs. 75.) describe a scirrhus of the colon. Likewise Beniveni (lib. v. *De abdit. rerum caus.* c. xxx. & xxxiv.) has observed a colic occasioned by a callus in the intestines. Hildanus also, in the body of a man who for some years had laboured under a constant fixed pain below the region of the liver, and had at length died of a most dreadful iliac passion, discovered a scirrhus already in a state of ulceration at the bottom of the cæcum. See Van Swieten, § 486. Riverius, *Prax. med.* l. x. c. i. *De dolor. colic.* and Roncall, *Hist. morb.* p. 172.

88. The common causes either affect numbers at the same time, or only certain districts, or particular artizans or families. Citesius believed that unripe acid wine was the cause of

the very severe colic with which he observed the inhabitants of Poictiers and neighbouring districts epidemically affected *. A similar colic is referred by Piso, Sennert, Crato, Cardanus, Wepfer, and others, to white wine not sufficiently purified. Tronchini asserts †, that immoderate drinking of punch may occasion such colics ; and, on the same account, suspected the bad effects of lemon-juice and vitriolic acid, when employed too abundantly. The inhabitants of Japan, as we are informed by Kaempfer, are likewise liable to a similar colic, on account of drinking a species of beer, probably of an acid kind ‡. Putrid waters abounding with animalcula, such as the Laplanders drink, are considered by Linnæus as the common cause of the colic with which they are affected. Huxham is of opinion that the Devonshire colic is to be ascribed to the drinking of cyder, which is so prevalent there. But Sir George Baker || is rather disposed to derive it from drinking cyder sweetened by the admixture of lead. In fact, nothing contributes more to induce such colics, and of the most severe kind, than wines sweetened with lead, or litharge ; as also medicines prepared with lead, employed both internally § and externally ; as also the fumes or powder of lead taken in with the breath, or swallowed ; cosmetics prepared with it ; and, lastly, meat boiled in leaden vessels, or long kept in them. Some also enumerate,

among the causes of this colic, the fumes of arsenic and of antimony not properly purified, or the internal employment of native cinnabar without ablution, and verdigris communicated to the food from copper vessels. Such persons, however, are completely refuted by Stockhausen, in his excellent work, who contends, that the colics which are generally named *metallic* arise from lead alone, and therefore names them *saturninæ*, to distinguish them from the other species of the complaint ¶. The colic which by others is named *metallica*, or *saturnina*, by Ramazzini is called *colica lumbariorum*, by Dubois *figulina*, as also *colica pictorum*, because the persons most liable to it are miners, those who work among metals, especially such as handle lead, or those who glaze earthen vessels, or dissolve and grind various kinds of pigments, or who inhale the fine dust arising from them, as potters and painters. But besides the species of colic already enumerated, it is to be observed, that in our times the name of *colic* is extended to other parts of the abdomen also: and therefore, that practitioners frequently make mention of the *colica stomachica*, *pancreatica*, *mesenterica*, *hysterica*, *nephritica*, and *hepatica*, or, as others would rather have it, *hepatalgia*.

* *De novo et popul. apud. piston. dolor. col. bil. diatrib.* Par. 1639.

† *De solic. piston.* Genev. 1757.

† *Amanitat.* iii. n. 2.

¶ *Lond. med. transf.* vol. i. p. 175.

§ *Traite des mauvais effets de la fume, de la litharge traduit du Latin, et commente par M. J. J. Gardane,* Par. 1776.

¶ An instance of this cause is adduced by Fernelius, in the following history (*De lue venerea. c. vii.*). "A friend of mine was subject to a distillation from the head, sometimes proceeding to the neck and shoulder-blades, sometimes to the joints of the feet; on which supervening, however, he used to be deprived of the proper evacuations. After he had been freed from his pains by my treatment, an empiric recommended the powder of lead as an antidote against gout, so warmly, as at once to persuade him that the prevention of its recurrence depended intirely upon that remedy. Having recourse to this powder, therefore, in fifteen days he consumed a pound and a half of it, taken in broth, or wine, or along with roasted pears, and other things, in place of sugar. But, upon the twelfth day, a terrible dysentery, accompanied with fever, arose, and was attended with the most dreadful gripes, not only of the belly, but also with cramps of the stomach reaching to the spine of the back. So great a relaxation of the stomach, and injury of its mouth followed, that it could not bear the slightest touch: and whatever was taken in, either contracting a leaden smell, or rancidity, was shortly after thrown up. In consequence of this, so great a quantity of flatus was emitted, that every thing swallowed seemed to be converted into wind. When the dysentery was allayed, the excruciating pains of the belly, loins, and stomach, continued twenty days, accompanied with a most distressing sensation of heat internally, and he passed the like number of nights without sleep. During this time, although he was not very thirsty, his appetite was intirely gone; nor was any thing passed by the belly, unless when it was excited by a clyster or cathartic. And every thing discharged, either by stool or by the mouth, whether spontaneously or by art, was tinged with a leaden colour, so much had it imparted that quality to the internal parts. An icterus in the mean time having arisen, the appearance of the whole body was changed; and the blood, which, after the dysentery had been allayed, was drawn to cure the fever, was found to be wholly yellow, bilious, and frothy."

Tissot likewise adduces instances of the most dreadful colics having been occasioned by sugar of lead, and the *tinctura antiphlogistica* of Garmann. *De colic. saturnin.*

THE DIAGNOSIS.

89. It now remains for me to mention in what manner the particular species of colic are distinguished. And although I have already observed, that no certain conclusion concerning the part affected can be drawn from the seat of the pain, on account of the frequent displacement of the parts from their natural situation, still, if they be contained in their place, no small light is obtained from the anatomical knowledge of the part in which the pain is fixed. When the pain, therefore, is situate in the umbilical region, it will appear to arise from the *jejunum* and *ilium* being chiefly affected, or from a morbid state of the mesentery itself. That pain, again, which is chiefly severe in the back and loins, towards the right side, is supposed principally to affect the *duodenum*, or beginning of the *jejunum*, as the termination of the duodenum rests upon the lumbar region. In that case, however, it in some measure resembles *cardialgia*, or *hepatic*, or *nephritic* colic, from which, however, it ought to be distinguished by the marks laid down elsewhere (77. 78.). But if the pain affect the colon, it rises up from the right thigh to the right hypochondre, from thence passing across under the false ribs, to the left hypochondre; and, lastly, bending down where the colon terminates in the rectum. Very frequently the pain is perceived in the left hypochondre, under the false ribs, and is then generally ascribed to the spleen. But, in place of the spleen,

Generally the intestines are affected there, namely, in those parts in which they are variously inflected and convoluted. And this pain is generally very troublesome to hypochondriacal men, and hysterical women. For if phlegm, or sluggish mucus, or flatus, or fæces, or any similar cause, adhere in the windings of the jejunum and colon, where they are directed to the left hypochondre*, a fixed pain may be excited in that hypochondre, which would be more profound when the jejunum is affected, and less when the colon is the seat. The same thing happens also, not far from the right thigh, if, as not unfrequently happens, the same causes adhere about the extremity of the ilium, and beginning of the colon; in which part a hard and circumscribed tumour frequently then betrays itself, until the cause from which the pain proceeds be discussed.

* Hoffman, *De intestin. dolor.* sect. ii. c. v. p. 178.

90. So much concerning the marks pointing out the part affected. I shall now make a few observations concerning the symptoms by means of which we ascertain the peculiar causes of each colic, or their varieties. And, first, the flatulent colic is indicated likewise by a fixed pain, or, as more frequently happens, by a shifting one; by a tense and tympanitic swelling of the belly, by borborygmi, and sometimes by difficult inspiration: all of which symptoms are allayed upon wind being passed by the mouth or anus. Sometimes in this species the belly becomes so tense,

that the umbilicus protuberates prodigiously, and runs into *hernia umbilicalis*, or *omphalocele*. Frequently the upper part of the colon is occupied by the flatus; in which case, in consequence of the neighbourhood of the stomach and liver, it becomes very difficult to say what part is affected, or from what cause. It seldom happens that a collection of air merely distending the intestines occasions the disease, but frequently the intestines being constricted, in consequence of spasm, shut up air in some of their convolutions, which, being expanded by the heat, overcomes the resistance of the coats, frequently distending them to a prodigious degree, as is rendered manifest externally to the feeling.

91. A sense of weight is said to denote, that the colic depends upon phlegm and viscid mucus, but not at all acrid; that of a fixed and pungent pain, that the complaint depends upon an acid or salt phlegm, or some other irritating humour; very severe tormina, for the most part shifting, seldom fixed, with the sensation of a ball rising to the fauces, accompanied with thin, watery urine, frequently voided, together with trembling, horripilatio, and yawning, denote the *spasmodic* and *convulsive* *, or *hysterical* and *hypochondriacal* colic; lastly, a sensation of gnawing, returning at intervals, and accompanied with a great variety of symptoms, is said to denote the presence of the *colica verminosa*. The species named *sanguinea*, *hæmorrhoidalis*, or *catamenialis*, may be suspected

to be present, first, from the absence of the other causes; and, next, from the default of customary evacuations, whether of the menstrual or hemorrhoidal flux; or, lastly, from the periodical flow of them being threatened, and sometimes from some febrile motion, which is generally excited in them. That it is the species named *stercoralis*, will appear, if the belly have been bound for some days, if a sense of weight and fulness be felt in it, and if some error with respect to the quantity or quality of the food have been committed. Hence also, and especially on an examination of what the patient may have been previously doing, or what he may have swallowed, the diagnosis of the *accidental colic*, from ingesta, from cold, and other evident and slight causes, will easily be obtained. The *inflammatory colic*, and *enteritis*, betray themselves by an acute pain, which does not admit of the touch, or returns on any slight pressure, and, by the swelling of the part, by the heat, pulsation, and fever accompanying it, which is sometimes greater, sometimes less. It is here to be remarked, that inflammation of the intestines, which quickly terminates in a fatal gangrene, sometimes secretly and unexpectedly supervenes on colic pains, while no symptoms of fever, or such as are very slight, are discoverable in the pulse. Anatomical dissection has repeatedly shewn this. Nay, from the observations of Morgagni, Valsalva, Riverius, Simpson, and De Haën, it appears that inflammations of

the intestines, in the same manner as those of other parts, occur not only without any fever, but even without any pain, probably in consequence of the feeling of the nerves being lost, or paralysis of them having come on. But when these symptoms are wanting, Morgagni, after the example of Albertini, thus points out the method of detecting them: "A low, and rather weak pulse, which, if attention be paid to it, is found to be somewhat variable, tension and hardness of the abdomen, with some pain, and, lastly, the face exhibiting an unusual appearance, different upon different occasions, so that I have sometimes observed the eyes terrified, as it were, and, at other times, a kind of livid colour about the lips: such are the symptoms—for sometimes he observed the tongue also unhealthy, and some degree of thirst—which have generally offered themselves to me in such cases †." But De Haën had a patient in whom the tension, pain, and obstruction of the belly, were absent ‡.

* Lorry describes a colic *simply convulsive*, the peculiar symptom of which was, an inexpressible kind of anxiety. On dissecting the body, he found the intestines, but especially the colon, very much constricted; and the stomach divided into two cavities, on account of a constriction, which had arisen in the middle of it. *Hist. de la soc. roy. de med.* vol. ii. p. 195. et seqq.

† *Epist. anat. med.* xxxv. n. 21. ‡ *Rat. med.* p. 14. sect. i. c. iii.

92. In the *bilious colic* there is a most distressing pain, at first generally shifting, but which afterwards is nearly confined to a spot, and appears, as it were, to bore through the intestines,

or to bind them with a bandage. It is attended with a bitter taste in the mouth, great thirst, sometimes hoarseness, or even *aphonia*, burning heat internally, tension of the abdomen, vomiting, or bilious stools, and not unfrequently with acute and raging fever. But sometimes the vomiting and looseness is so great, that it readily passes into *cholera*, or the *iliac passion*, or *ileus*, properly so called. The last happens principally when, as the disease advances, the pain is confined nearly to one spot, and the belly is almost entirely shut. It is also peculiar to the bilious colic, that it occasionally remits, or even for a few hours altogether ceases, but afterwards returns with greater violence than ever: which change, when it is about to take place, is generally foretold by the complaining and sorrowful countenance of the patient. Some have supposed that this colic is one and the same with the inflammatory species, but improperly. This, however, is certain, that it frequently passes into enteritis.

93. But it necessarily happens in every colic, when the nerves and fibres are twitched with a somewhat sharp pain, that spasms and convulsions must be excited, or readily supervene on the complaint. But if the spasms and affections of the nervous system be remarkable; if the umbilicus and abdominal muscles be, as it were, drawn in; if the pains appear to be deeper seated, and to stretch to the loins, from whence the spinal nerves come out; if the head be affected with

vertigo or excruciating pain ; if epilepsy, also, or paralysis of the feet or hands, or of both, come on, or if the pain terminate in it *, and the belly be so bound as scarcely to admit a clyster-pipe : —it is then generally named the *spasmodic* and *convulsive* †, or *nervous colic* ‡. I observe that it is likewise named *colica pictorum*, on account of being supposed to be particularly 'hostile to the inhabitants of Poictiers ; but it is neither peculiar to them ||, nor does that one which was observed by Citesius § to prevail epidemically or endemically among them, comprehend all the spasmodic colics, but is rather to be considered as being a particular species of them. Others, who have been of opinion, that in it the mesenteric plexus §, and the mesentery itself, are chiefly affected, likewise, and not improperly, give it the name of *mesenteric colic* ¶. Some also have supposed that it is to be derived from the spinal marrow being primarily affected, while the intestines and mesentery remain uninjured, and have distinguished it by the peculiar and new name of *rachialgia* **, excluding it altogether from the nature of colic ††.

* Tissot (*Epist. var. arg.* p. 152.) observes : “ Concerning the causes of colics which induce paralysis, authors are not agreed. I am disposed to believe, however, that certain *wines, poisons, and scurvy*, are the only causes of them. The most severe colics from other causes are not followed by paralysis. This opinion, however, I propose with deference.”

† Hoffman, *Med. rat. syst.* vol. iv. sect. 2. c. v. § 9. Vogel, *De cog. et cur. morb.* cl. iii. *dol. colic.* § 442. ‡ Town. upon Allen's *synopsis*, P. ii. c. iv. p. 156. Buchan's *Domest. med.*

|| For the Caribbee Islands, Barbadoes, Hungary, Franconia, Moravia, Austria, and other countries, are likewise liable to it.

§ Citeſius, *Diatrib. de nov. et popul. apud piſtones dol. colic. bilioſ.* par. 1639. A good many writers have given their testimony, that this colic has sometimes appeared as an epidemic. It appears from Lange (*Epistola de torminibus ventris a febre reſectis*), that it raged in Moravia and Sileſia in the ſixteenth century; as also from the works of Crato, an. 1582, *De paralyſi et colica*. But, above all, a paſſage of Paulus Ægineta deſerves notice (lib. iii. c. 43. towards the end), which is as follows: “ I am of opinion, however, *that the bow-el-complaint, which ſtill prevails*, proceeded from ſuch humours as that did *which begun in the ſtates of Italy, and raged in many other parts of the Roman republic like a peſtilence*; in conſequence of which moſt patients were attacked with epilepsy, ſome with loſs of power of the joints, while ſenſation remained, and others were attacked with both; and of thoſe who were attacked with epilepsy more were cut off, while the greater number of ſuch as were attacked with paralyſis of the joints eſcaped; the cauſe of the complaint, as in a criſis, being attacked from the part which it had affected.” If Pliny,—a paſſage from whom I have quoted above, in a note upon par. 82.—when he wrote that *colic was a new complaint*, had meant this epidemic, of which Ægineta makes mention, he could not be accuſed of falſity, as he has been by Sennert and Tronchini; for this epidemic ſpafmodic colic probably had begun many years before, namely, during the reign of Trajan, and continued to ſpread from one diſtrict to another, until the time of Ægineta, who flouriſhed under the Emperor Honorius.

¶ Willis, P. ii. c. 15. “ The part principally affected in colic to him appeared to be, the meſentery, on account of its being very ſoft; from which the morbiſc matter paſſes, not by the artery, but by the nerves, and that its ſeat is not the coats of the inteſtines, but the nervous plexus of the meſentery.”

** Ettmuller, vol. ii. p. 1. *Coll. Præd.* ſect. xi. p. 183.

†† Aſtruc, in a theſis publiſhed at Montpelier, an. 1751, entitled *An morbo colicæ piſtonum rectius rachialgia dicto venereſcit in rachio?* Sauvages, *Noſol.* cl. vii. ord. v. n. 29.

The rachialgia of Lindvig is a pain in the ſpine of the back; from *Pæx. 5, ſpina d. r. and erp. 10, d. lo.* And from *ly: 10* he derives colic pains from the nerves of the ſpinal marrow being at-

fected. After his example, Sauvages has transferred the name of *rhachialgia* to the *colica pictonum, saturnina, and convulsiva*. But, in fact, the rhachialgia of Ludwig, that is, the true pain of the back, would belong to the kind of disease by Sauvages named *lumbrago*. Rhachialgia is either *idiopathic* or *sympathetic*. Delius was rather disposed to distinguish all those things by the name of *notialgia*, from *αλγω, doleo, and νωτος, dorsum*.—First, of the *rhachialgia sympathetica*. In colic pains, not only the arch of the colon, but likewise the rest of the intestines, are affected with uneasy tension. But the mesenteric plexus, by descending to the aorta, so adhere to the spine, as to seem, as it were, united to it anteriorly, and, therefore, not only occasion shifting spasms in various parts of the intestinal canal, but also draw the spine, at the loins, into consent. Hence it frequently happens, that the neighbouring sides are affected together, and the spasms ascending to the thorax and ribs frequently resemble pleuritic pains; which, however, shortly cease, upon the cause of the spasms of the intestines being removed by proper remedies. The hemorrhoidal pains frequently pass to the *os sacrum, loins, and spine*. For this ought not to be derived merely from the turgid and varicose vessels in the anus, intestines, mesocolon, and those derived from the hypogastric, but chiefly from the connection of the *hypogastric plexus* descending to the rectum with the nerves of the os sacrum, and those of the spine in the neighbourhood. Hence, likewise, the *hemorrhoidal colic*; for the tension stretches from the rectum to the loins and intestines. The pains during menstruation, pregnancy, and parturition, frequently extend to the loins. In young puerperal women, frequently a troublesome tension is excited in the back from weakness of the spine, the parts of which have not yet acquired their due strength. For pregnant women can scarcely support the increased bulk and weight of the abdomen, in consequence of which such weakness of the spine and haunches is occasioned, that for some weeks afterwards they can scarcely stand upon their legs, but totter; and if they do not refrain from violent exertions, or if they have had a difficult delivery, they on this account experience distressing and habitual pains in the small of the back for the remainder of life. The same inconveniences are liable to attack women more advanced in life, when, during the violent pains of parturition, they over-stretch the *ligaments, muscles, and nerves* of the spine at the loins and the haunch-bones connected with the *os sacrum*. It appears probable, that from this cause the

Medical abscesses, as they are called, more frequently arise at the spine of the loins and lower parts, than elsewhere. That they may not, therefore, be distressed with these complaints, it is necessary by repose to restore the parts to their former strength. In the nephritic species of the complaint, on account of the connection of the *renal plexus* with the *mesenteric*, and with the *vertebræ*, tensive pains ascend to the spine of the back. Sometimes the *nephritic pain* is less uneasy in the region of the kidneys, and more severe down at the inguina, testes, and stretches along the tract of the *crural nerve*, being felt, particularly during walking, at the lumbar spine. In fevers also, the *stiffness* and the shifting tensive pains of the back depend on dyscrasy of the fluids. Hence the lumbago of fevers and small-pox are a species of *rhachialgia*. But the pains of the back and loins may arise from the increased motion and impetus of the blood. In general, however, they are to be derived from spasms of the *prime viæ* stretching to the spine. Nay, spasms may pass from the spine to *encephalon*, and excite pains of the head by consent. But enough concerning the *sympathetic* species of the complaint. I shall now proceed to the idiopathic pains of the spine: There is a species of *idiopathic rhachialgia*, consisting in a certain pungent and fixed pain in the vicinity of the thorax and loins, stretching to the sides of the loins and thorax, succeeding to violent efforts, immoderate dancing, sudden twisting of the spine of the back, or even sudden changes of the body from one side to another. With this species of *rhachialgia* frequently the organs of respiration are so affected, that the inspiration is perceived to be deep, short, and somewhat painful. For the most part this pain, while the body is at rest, likewise ceases, especially if the patient find a convenient posture. But it is shortly after excited at the commencement of motion, or when it is continued. Sometimes, also, it is constant, ceasing when the body is at rest, and rendering the respiration anxious. When it takes place in the loins, and is fixed there, it not unfrequently increases so as to affect the whole spine of the back, and shortly after occasions a pain, either of the whole head, or at least of the back of the head. In these pains the cause appears to be, some injury sustained by the spine of the back. But external violence applied to the muscles will produce the same effect. The spine of the back is pressed upon, and becomes painful, in consequence of flatus, dropsy, pregnancy, and swelling of the mesentery and ovarium. When the spine

is injured in consequence of exertions, dancing, and the carrying of burdens, luxation seldom happens. If the spine at the same time receive a blow, the vertebræ are rather broken, distorted, or slightly luxated. Sometimes the ligaments are luxated; the vessels are compressed, or open and pour out their fluids; and slow corruption of the effused matter, and abscesses at the spine of the back, and osteosteatomata take place. The former induce slow *caries* of the vertebræ, the latter induce tumours, by which the neighbouring parts are compressed; and although bony strata arise in the tumour itself, still the neighbouring parts of the bones are eroded by foul abscesses arising in the tumour. In each disease, after various agonising pains of the spine, emaciation and slow fevers at length cut off the patient. See the inaugural dissertation of Joan. Gotthelf. Herrman, *de osteosteomate*, Lips. 1757. The origin of *exostoses* is to be referred to the laceration, bursting, or luxation of the ligaments. The muscles also are affected, and become inflamed; effusions, stagnations, and œdematous swellings ensue; hence pains and abscesses. They also are luxated, and forced from their seat. See Pouteau, *Melange de chir.* Lyon. 1760. . Ludwig, *Advers. med. pract.* vol. i. P. iv. art. 4.

94. Retaining the generic name of *spasmodic colic*, which to me appears more proper, I have divided it, after Bontæus *, into *primary* and *secondary*. The primary species arises from an external cause manifestly introduced into the stomach. And it ought to be considered as two-fold, namely, the *metallic*, or *saturnine* †, arising from metallic bodies, especially those of lead, taken either in the form of powder, smoke, or vapour; and the *vegetable species*, or that occasioned by juices or drink procured from the vegetable kingdom ‡. To the *metallic*, or rather *saturnine* species, ought to be referred, the colic of plumbers, potters, and painters, and the like ||. To the *vegetable species*, again, belongs the *colica picto-*

num of Citefius, the *Devonshire colic* of Huxham §, the *colica Japonica* of Kaempfer, the *colica Hungarica* and *Franconica* of Sennert, the *colica Moravica* and *Auftriaca* of Hoffinan, and fimilar varieties occafioned by particular kinds of wine, or beer, or acid vegetable matters, or acid and four fruits. Moreover, to the *fecundary* fpecies, the caufe of which is internally fITUATE, and primarily contained in the blood, belong the *colica arthritica* of Muſgrave and Tronchini, the *ſcorbutica* of Sennert and Vanzelt ¶, the *ſebris* of Riverius **, and the *melancholica*; which are occafioned by the matter of gout, rheumatifm, and ſcurvy, or the dregs of fevers imperfectly reſolved, or by an accumulation of black bile in the viſcera of the lower belly.

* *Differtat. ſur la coliq. du Poiſſon dans de journal de medecine, par M. Vandermonde, tom. xv. p. 399.*

+ The name of *metallic* is more extenſive and agreeable to thoſe who are of opinion that it ariſes from mercury, aſenic, cinnabar, copper, and other metallic ſubſtances. But it is conſidered as being more properly named *ſaturnine*, by ſuch as derive it intirely from lead, or from its preparations, as the *ceruſſe*, *litharge*, *minium*, the *fugar*, *extraſt*, or *tincture*. At the head of thoſe is Stockhaufen, in his book entitled *De lythargyrii fumo noxio, morbifico, cuſque metallico frequentiori morbo*, &c. Goſlar, 1656, which was published at Paris, an. 1776, tranſlated into French, with notes, by Gardane. *Traite des mauvais effets de la fume de la litharge*, &c. Nor ought we to paſs over the eſſay of Johan. Guillel. Idemann, entitled *Differtat. de colic. ſaturnin. metallurg.* Gotting. 1752.

‡ Citeſius, l. c. Sennert, l. c. &c. ¶ Tronchini, *De colic. piſſon.* 1757. § *De morb. colic. Damnon.* ¶ *De Podagra*, 1738.

** *Prax. med. lib. x. c. i.* Fernellius, *Pathol. lib. vi. c. x. &c.*

95. The *metallic*, or *saturnine* colic, is more frequent, severe, and obstinate, than the other species. It is likewise less shifting, holding a more constant seat, namely, chiefly within the range of the intestines and mesentery. At the commencement of the complaint, as we are informed by Wilson,—who had frequently an opportunity of observing it in the miners at Lead-hills *,—it first betrays itself by a sense of uneasiness, and unusual weight about the stomach, particularly about the upper orifice. Sometimes, also, the intestines are affected with pain. In persons thus affected, the saliva is sweet, and as it were bluish, like that of those who have been chewing lead; the pulse is small; the skin cold, and frequently covered with a viscid sweat; the legs are benumbed, and totter; the strength fails; the appetite is lost, and the food is not digested. In the mean time, not unfrequently a diarrhœa supervenes, and is attended with relief, provided it be of short continuance, and moderate. For if it continue too long, it threatens worse consequences. The persons thus affected do not become bed-fast, but still walk about, and attend to their affairs. But if these symptoms continue, or if the person afflicted with them indulge in the drinking of spirituous or fermented liquors, while the stomach is full, or shortly after the handling of lead, he is immediately seized with a fixed pain in his stomach, or in the lower part of the abdomen, frequently extending from one ilium to the other;

and then, in fact, the disease may be said to be confirmed. It is a mark almost exclusively peculiar to the metallic colic, that it is not aggravated by the touch or pressure. But the severity of the pain is generally so great, that the patients are driven almost to desperation; become extremely anxious; are constantly agitated; shudder, and are seized either with a stoppage of the urine, or a strangury †. Generally, however, they are not thirsty, nor feverish. In the meantime, the belly is so much bound, that not only nothing is passed, but there is not even room for the admission of a clyster; and if any thing be brought off by artificial means, it is hard, globular, and nearly resembles goat's dung. This excessive and obstinate costiveness, accompanied with remarkable contraction of the abdominal muscles, and retraction of the umbilicus, constitutes an uniform and peculiar symptom of the metallic colic. But while these symptoms are going on, the pulse, according to Wilson, sometimes rises; the skin becomes warm; vertigo and dreadful headach come on; to which either a kind of stupor, or wild delirium, succeeds, making the patients tear themselves with their teeth, while the extremities of the body are convulsed, the strength fails, the beats of the arteries intermit, and coma, or apoplexy, puts a period to the patient's misery. But it more frequently happens, that after long-continued excruciating pains,

enormous vomiting and hiccuping, convulsions, fainting fits, and contractions of the joints, the complaint terminates—which generally happens within fourteen days—in *parefis* of the hands or feet, or both, or loss of motion, but not of feeling; sometimes in dry *asthma*, *icterus*, or *diarrhœa*. It not unfrequently happens also, that in the midst of the pains the patient suddenly experiences a severe attack of epilepsy, which continues to distress him without interruption for many hours; and, when it has at length subsided, we must not suppose that he is relieved from all danger; for it frequently returns shortly after, endangering his life, on account of the injury sustained by the brain; or, upon its subsiding, a paralysis of the limbs succeeds, or the colic is again revived with severity.

* *Journ. de med. de Vandermonde*, tom. viii. p. 135.

† *Ibid.* p. 106.

96. Many ingenious opinions have been published by authors of great learning and experience concerning these species of colic *; but it is much to be lamented, that, after innumerable hypotheses have been advanced concerning them, their nature lies still in darkness, and that we are yet doubtful what part is chiefly affected, in what manner their remote causes act, and what taint or injury they occasion, whether in the solids or fluids. For the bodies of such as have died of these spasmodic colics, and especially of the metallic or saturnine kind, although dissected with

all possible care, have thrown no great light on the subject. Moreover, it is very difficult in diseases, especially where the nerves are immediately affected, to distinguish the cause from the effect. Tronchini affirms †, that, in general, in the bodies of those who have died of the severest colic, nothing is discovered, except that the intestines are somewhat pale, and distended with flatus. He moreover adds, that Senac opened the bodies of upwards of fifty persons who had died of colica pictonum, without being able to detect the smallest vestige of their cause; as he was informed, by a letter from him, about the year 1750. He likewise confirms this by the dissection of a painter of Angiers, who was opened by Fernelius, in whose body the liver, spleen, stomach, and kidneys, appeared sound, while no obstruction in the gall-bladder, no accumulation of morbid fluid in the mesentery, and nothing, in short, any where which might have been the cause of such excruciating pains, could be detected. However, he excepts those cases in which the remains of imperfectly resolved, or ill treated fevers, or scurvy, or melancholy, have occasioned the disease; for he confesses that some vestige may be discovered on dissection. He does not hesitate to prove this, not only by an observation quoted from the *Adversaria* of P. Milo, a physician of Poitiers,—from which it appears, that, in the body of a Franciscan friar, the membranes of the jejunum, not far from the liver, were filled

with green bile, the intestine distended with flatus, and all the coats, except the external one derived from the peritoneum, were corroded by the acrimony of the bile, while the omentum itself did not remain exempt from the affection; but also by two cases which fell under his own observation. In the first of these he makes mention of a man of the melancholic temperament, who had died, after extreme torment, of colic pains, and in whom the concave part of the liver, and neighbouring parts, appeared tinged with a kind of blackish-green pigment. In the other he adduces the dissection of a man who had died of scorbutic colic pains, in whom the innermost coat of the intestines appeared deprived of its mucus, and throughout slightly corroded, by the acrimony of the fluids; and their vessels, as well as those of the mesentery, were found varicose, and filled with black blood †.

* See Citefius, l. c. Sennert, l. c. Riverius, l. c. Crato, l. c. Grasshvys, *De col. piñ. tentam.* Tronchini, l. c. Huxham, l. c. Stockhausen, l. c. Ilseman, l. c. Bontæus, l. c. Baker, l. c. De Haen, *Rat. med.* par. 4. c. viii. Lieutaud, *Diar. med. obs.* l. i. Massuet, *Dissert. sur la coliq. dans la biblioth. raisonnée*, tom. vii. p. 144. & 279. And Strack, who, after carefully collecting and translating the observations which he had inserted in the *Paris Journal* for April 1765, p. 235. and for February 1766, p. 125. concerning *colica piñonum*, published them in the year 1772, at Leipzig and Francfort. † *De colic. piñ. c. xix.*

‡ We find, among the author's papers, several other histories and anatomical observations in illustration of this pathology, wherefore I have judged it proper to subjoin them, not to omit any thing which might afford any assistance to the reader. [*Ger. Edit.*]

Wilson—who has shewn, that animals exposed to the vapours arising from the melting of lead, or which feed upon plants impregnated with them, are attacked with the same complaints as men—records the following observation: “In a dog which had died of the colica saturnina, I found the inner coat of the stomach and intestines in different parts encrusted with the powder of the lead; and likewise slight inflammations here and there, of which some had passed into gangrene, and been perforated. The fæces were scanty, and very hard. The coats of the intestines were very thick, and their cavity much diminished.” Lieutaud (*Diar. med.* vol. i. lib. i. obs. 76.) observes: “A painter, after having had the colica saturnina, was seized with a spitting of blood. Independent of morbid states of the lungs and pleura, the duodenum, jejunum, and ilium, were here and there found inflamed. The liver was obstructed, and the pancreas hard.” The same author (obs. 425.), in the body of a young man, by trade a brazier, who had died of the colica saturnina, observed the intestines very much swelled, and marked with livid or black spots. The colon was constricted in various parts, independent of morbid states of the lungs. The same author (obs. 433.), in another person, who had died of the colica saturnina within two days, observed the colon and rectum unusually distended, with various gangrenous spots, and some constrictions. In another painter (obs. 77.), who had been carried off by the same disease, he found the intestines in various parts constricted, and, as it were, strangulated, with many gangrenous spots of a reddish livid colour, especially in the jejunum and ilium, the vessels of which were very turgid: nor was the stomach itself free from inflammation and these spots. In a painter who was affected with the same pain, to which delirium and convulsions had succeeded before death, the omentum was found by him in a state of gangrene, the colon straitened, and, the cells being obliterated, merely cylindrical, the cœcum surprisingly distended, and putrid, and the gall-bladder filled with black bile. He likewise (obs. 1172.) mentions a lapidary, who, after the colica saturnina, and contraction of the hands, from which he was recovering, began to swell, with pain, and was cut off by a slow fever. He found his intestines livid, and surrounded with sanies; and the lungs abounding with hard, and, as it were, cartilaginous tubercles, and throughout containing pus. Lastly (lib. ii. obs. 151.), he mentions the case of an artificer, who died in consequence of the colica saturnina. His belly had become swelled and tense. His

intestines were immoderately distended with flatus, especially the part of the colon lying in the epigastrium, the part of the liver in the neighbourhood of which being, as it were, bruised, was marked with an ecchymosis.

97. Nor are authors agreed, whether the epilepsy and paralysis into which patients fall is to be derived from a metastasis, or merely from the communication of the par vagum and intercostal nerves, with which the nerves of the arms and legs frequently consent. The ceasing of the pains, however, without being attended with any excretion, which generally takes place upon a severe fit of epilepsy or paralysis coming on; the ready transition of epilepsy into apoplexy; the long continuance and obstinacy of the paralysis; and, lastly, the swellings, which, like ganglia, take place in the metacarpus and metatarsus, seem to favour the first opinion. To which, if we add the method of cure by which both the paralysis and such swellings are discussed, it renders it still more probable. Nor is it any objection to this opinion, that this paresis disappears merely in consequence of the application of remedies to the abdomen, and internally, as Van Swieten is convinced. Hillary * mentions a case, from which it appears, that the *matter* of the disease caused the *paralysis* of the hands, which being discussed by external applications, the *pain* of the *intestines* returned, and, on it again ceasing, the paralysis of the hands was renewed †.

* *Observations on the changes of the air, &c.* p. 182.

† The author, among his *Adversaria*, has some extracts from the work of Strack upon the *colica pictonum*, which I have thought proper to transfer to this place, in order as far as possible to elucidate the obscure nature of the disease by the observations of others. [*Germ. Editor.*]

“ Strack first inquires, whether or not any certain conclusion can be drawn concerning the cause of this disease, which is otherwise doubtful. Some have sought for it in lead and cerusse; others in litharge, tin, copper, and crude antimony; others in different pigments, in apples, pears, and unripe grapes. Hence some have named the disease *colica pictonum*,—*deauratorum*,—*sculorum*; others the *colica pictonum*,—*vegetabilis*, or the *colica metallica*. Tronchini enumerates eight different species of it. Grasshys considers as a cause of this disease, whatever deprives the inner coat of the intestines of its mucus. Citesius derives the name from the country of Poitiers (*pictones*). Others pronounce the nature of the disease to be almost intirely unknown.

“ From various observations he learnt, that besides the causes already mentioned, another frequently occurs, namely, the shifting of the arthritic matter, and its being carried down to the lower belly, to which alone he directed the cure; and he confirms the propriety of his method by the histories of the patients whom he treated. He used to employ the decoction of the woods, crude antimony, the warm and tepid bath, and by these means he fulfilled the casual indication. For the bath he recommended certain hot springs; and he employed the bath to prevent the disease. For it is apt to return, and the more certainly, if the bath has been employed but a short time; hence he recommends to his patients employing it 200 times, and upwards.

“ Among the symptoms of colic derived from the arthritic matter, he enumerates this one, that, in the midst of the griping, the abdominal muscles are so sensible and contracted, that the patient cannot raise himself, but remains with his body bent, and his head flooping; and this he reckons a pathognomonic symptom.

“ He does not deny that the causes above mentioned sometimes occasion colic; but never the *colica pictonum*. After, therefore, refuting those who name the colic of painters the *colica saturnina*, he asserts, with Musgrave, that it is an *arthritic colic*; and that anti-

mony, which Tronchini enumerates among the causes of this colic, is the best remedy against the colica pictonum.

“The diagnosis is either easy or difficult. It is likewise easily known by one symptom; if a shifting pain attack different parts, external and internal, and if at length the arthritic matter settle in the abdomen.

“When a fixed pain at first occupies the abdomen, it is more difficult to ascertain whether the colic proceeds from the arthritic matter, or from another cause. It is distinguished, however, by the following marks: If there be no other probable cause which can be put in competition with the arthritic; if there be present a violent pain, and if it be without fever and inflammation, but with a small and slow pulse; if the colour of the skin be yellow or olive, the eyes hollow, and surrounded with a lead-coloured line; if the patient feel pains in the joints, and if, likewise, he experience rapid and great lassitude, after slight fatigue, together with asthma; if the debility be greater after sleep than before it; if the sweat be attended with burning heat, and the skin be covered with miliary spots; if there be a shifting titillation upon the skin of the face, and especially on the forehead, when the patient, on applying his hand, feels nothing; if there be thin urine, attended with a burning strangury; or that which is whitish, like smooth, oily whey, with a white sediment, is discharged. These symptoms, to the author, appear to denote an arthritic cause.

“The outlet of the arthritic matter takes place either by sweat or urine, or an abscess, very rarely by a diarrhoea; sometimes alternately by sweat and urine, with the intervention of an abscess.

“It is a favourable symptom if the pain be increased about the fifteenth bathing. The matter of the disease is then set in motion, and a fever is excited.

“The miasma of the shifting arthritis is a singular one, and may be different from every other disease and epidemic. It does not agree with gout; for the nodes of gouty patients, if they be ulcerated, pour out a white, calcareous, inodorous matter, while those of arthritic patients pour out a black matter, smelling like a rotten egg, but without caries of the bones. Hence also he recommends blisters and issues.” *Com. Litf.* vol. xviii. P.i. p. 674.

98. Lastly, it remains for me to point out by what symptoms the *stomachic, pancreatic, mesente-*

eric, hysterical, nephritic, and hepatic species of colic, are to be distinguished. With respect to the first, I have already treated of it at sufficient length in (Chap. VI. concerning *Gastrodynia*. Both the peculiar seat, nature, and size of the pancreas, uterus, and mesentery, and the diseases of these parts, whether chronic or acute, will afford an attentive practitioner sufficient grounds for distinguishing the pains of these parts from others. The *hepatic* species is distinguished from others, not only by its seat, but likewise by the presence of *icterus*, saffron-coloured urine, white fæces, and frequent stools. The *nephritic* species very constantly distresses one or other of the kidneys; extends along the ureter, retracts the testicle, causes numbness of the thigh, sometimes occasions strangury, or at least is attended with a discharge of urine, which is at first thin and limpid, and afterwards thick, and deposits sand; it is not, in general, aggravated by food; it is not relieved by vomiting or purging; while, in pain of the intestines, the contrary takes place, in which also the urine is passed thicker, and more saturated with its contents.

THE PROGNOSIS.

99. COLIC, although it often soon terminates favourably, is a complaint not to be treated slightly. For sometimes, in consequence of the severity and continuance of the pains, it very quickly cuts off the patient. The bad symptoms

are, fever, watching, obstinate costiveness, loss of strength, hiccup, vomiting, ileus, coldness of the extremities, a cold sweat, syncope, convulsions, and epilepsy. It generally terminates in inflammation and gangrene, or sphacelus * of the intestines. The flatulent species, if it do not arise from new wine, or other fermenting things, is attended with less danger, as also is the *hysterical*, *hypochondriacal*, and simple *convulsive* species, that from phlegm, from the ingesta, and from worms. In this species, however, there is a risk of the intestines being perforated, or of an intussusceptio taking place †. The *bilious* and *inflammatory* species are more dangerous. But the *spasmodic*, the *colica pictonum*, *metallica*, or *saturnina*, is still more to be dreaded. The author of the *Coacæ Prænotiones* observes ‡: “When persons labour under long-continued pains of the loins and small intestines, and anxiety about the præcordia, accompanied with fever and loathing of food, if an intense pain arise in the head, attended with a species of convulsions, it quickly proves fatal.” He likewise observes: “That persons in whom tormina, and pains about the umbilicus and in the loins occur, which are removed neither by a purge, nor otherwise, are attacked with a dry dropsy ||.” Epilepsy supervening generally proves fatal. When the pain is removed, if the fæces come off with difficulty, and in the form of scybala, there is reason to apprehend the return of the colic. Paralysis, how-

ever, for the most part removes colic pains, and averts the immediate danger to life ; but it occasions lasting illness, from which the patients recover with the greatest difficulty. It is a favourable symptom in that which proceeds from a metastasis of gout, rheumatism, scurvy, or retention of the perspirable matter, when the pains return to the joints, when spots break out on the skin, and when the body is covered with copious, warm, equally-diffused sweats. Sometimes, likewise, an epistaxis, a discharge of blood from the hemorrhoidal veins, or uterus, or a diarrhœa, alleviate the complaint.

* To this part belong the Aphorisms of Hippocrates, beginning with “ Ab ileo vomitus,” &c. and “ ileus cum apprehendit,” &c. which we have mentioned, in the last place, among the notes upon par. 86.

† In a person who had died of a colic pain and other symptoms, Robin found the *cæcum* inclosed within the colon. The same author also found a rectum, which, in its upper part, had received the cœcum, and no small part of the colon ; and Le Blanc has a similar observation. In both patients, besides the most excruciating pains in the abdomen, vomiting likewise occurred. *Mem. de l'acad. de chir.* vol. xi. p. 353. 354.

‡ Numb. 317. || Aph. xi. sect. iv.

THE CURE.

100. IN every colic, that method of cure will be found to be best which is adapted to the indications. But the indications must be the same as those laid down in the chapter on *Gastrodynia* (80.) ; nor will the cure be different (81.). When

the pain is present, therefore, blood ought to be drawn from the arm, foot, and hemorrhoidal veins, in the *colica sanguinea, inflammatoria, and catamenialis*; as also in the *biliosa* *, or any other species, if the heat of the fever, the thirst, and size of the pulse, give reason to suspect the presence of inflammation. Likewise, dry and bloody cupping-glasses may be sometimes applied to the abdomen and soles of the feet, with the view of revulsion, especially in the *spasmodic, sanguineous, and inflammatory* species. By these means also, the spasm with which the intestines and other parts are affected, is usually resolved. Among them Pringle recommends the application of blisters to the part affected †. The pain, however, is more immediately removed by bland and fresh oils, taken abundantly and frequently; by emollient injections; by fomentations; by cataplasms; by liniments applied warm to the belly; by tepid bathing of the feet, especially in the *bilious* species ‡; and by remedies prepared with opium; especially when the material cause has been subdued or diminished. We must endeavour to correct, and quickly and gently evacuate it, as far as lies in our power.

* In the *Adversaria* of the author, we find remarked, in the hand-writing of Dallarmi,—his former friend and pupil,—that he had seen at Fayence, in a nobleman affected with this colic, and a high degree of jaundice, which had frequently attacked him, blood repeatedly drawn by the author with the greatest success, without the patient having again been attacked either with the colic or jaundice. We have thought proper to insert this, to shew how much some depart from the truth, who immediately exclaim, on seeing

patients affected with the jaundice, that we ought intirely to abstain from bleeding. But there is a mean to be observed. See ar. 244. Vol. I. *Of Fevers*, when it is to be employed with caution. See also *Trattato delle acque di s. Cristofora*, p. 82. et seqq. [Germ. Editor].

† *Diseases of the army.*

† Porter, *Edin. med. essays.*

101. Compression of the abdomen generally affords relief in the *flatulent* and *convulsive* species; and, moreover, the spirit of sweet nitre is recommended by Hartman and Hoffman, together with the *liquor anodynus mineralis*, castor, and the decoction of chamomile, and other carminitives, as they are called. When the pain remits, which happens after an injection has been thrown in, the belly may be likewise advantageously purged by a gentle laxative, as rhubarb, manna, the pills of Becher, and the like. When a great quantity of rarefied air is present, and the abdomen is much inflated, frequently the drinking of cold water, and cold external applications, condense the air, and excite the re-action of the fibres*. This has also not unfrequently proved serviceable in the *bilious colic* †; which likewise receives benefit from subacid substances, whey, infusions of tamarinds and cassia, nitre, and the like. To allay the heat, to attenuate the lentor of the fluids, and to correct the alkaline acrimony of the bile, some vegetable acid ought to be mixed with the water to be drunk, as lemon, citron, or orange juice, syrups prepared from these; as also bar-berries, raspberries, &c.; and, when the disease is violent,

we must have recourse to the more powerful remedies, already repeatedly mentioned. In the *colica ftercoralis*, brisk purging must be used. The bowels ought to be excited, not only by gently stimulant clysters, especially a decoction of tobacco, but also by manna, conjoined with oily remedies, or by linseed, or olive oil. Some authors, as Redi, propose the water of particular springs, and the English salts, largely diluted with water, or cathartics corrected with opium, as Sydenham, Riverius ‡, and Huxham ||, whenever the complaint does not yield to slighter remedies. Galen added aloes to the opium. Hoffman declares, that he has known country-men distressed with the most excruciating pain of the bowels, who were instantly relieved by the swallowing of the smoke of tobacco §. In the cure of the pituitous species, incisive and saline remedies, gum-ammoniac, and the seeds of the *daucus Creticus*, and Venice soap, are recommended; but a prudent practitioner will have recourse to them cautiously. Scardona, in this colic, when very obstinate, preferred to all other remedies, the acidulous hot springs, drunk during warm weather; “for,” he observes, “it is a remedy, the utility of which is proved by an infinite number of experiments.” The remedies calculated for the removal of worms will be mentioned particularly elsewhere. The *meconium*, or coagulated milk, is gently drawn off by sweet and oily remedies, by syrup of suc-cory, with rhubarb, by cow’s gall rubbed upon

the belly, by clysters, and suppositories. During parturition, if the strength fail in consequence of pain, waters distilled from black cherries, balm, citrons, and oranges, or some bread dipped in wine, or animal soup, &c. may be given. If the pains be *spurious*, it will be proper to add some laudanum. If hysteria come on, it will be sufficient to pour into the waters already mentioned a few drops of the tincture of amber or castor, and to give it by spoonfuls. In the hysterical colic, which is seated in the uterus or neighbouring parts, Rochard, adducing instances of cures, contends **, that clysters of cold water, thrown in every two hours, and linen wrung from it applied to the belly, completes the cure ††.

* Galen removed a pain, occasioned by flatulence, by the application of a dry cupping-glass, with much flame. See *meth. med.* lib. xii. † See Galen, l. c. c. vii. Trallianus, lib. x. p. 175. Avicenna, lib. iii. tractat. iii. c. vi. Amatus Lusitanus, lib. i. cent. ii. & lib. ii. cent. xlv. Septali, *Animadv. med.* lib. viii. ccl. 81. ‡ *Observ. med.* cent. i. obs. 1.

|| *De morb. colic. damnosa.* where he prescribes the following formula.—R. Cochl. min. a scrup. j. ad semi drachm. Calomelan. scrup semis. Laudani solidi, gr. j. Olei caryophil. gutt. j. M. F. Sijul. After two or three doses, he prescribes an infusion of fenna, or a decoction of manna. Sometimes also, oil to the extent of six ounces.

§ Van Swieten, § 964. p. 131.

¶ Lib. iii. p. 61.

** *Journ. de med.* Jan. 1772, p. 42.

†† In the colic which succeeds to suppression of the menses, Riberius and Hoffman recommend the use of cold water, as Van Swieten observes; or even propose throwing up injections of the same.

102. But it is now necessary to say something concerning the cure of the *spasmodic colic*, into which the preceding species frequently pass. In it, in general, all acrid things, cathartics, and generous things *, ought to be banished. Bleeding is scarcely admissible. Emollient and demulcent remedies, which remove spasms, both taken internally, and applied externally, are preferable; and, lastly, those things which gently, and *per epicrasin*, open the belly. There are not wanting instances, however, in which the smoke of tobacco, thrown in *per anum*, has proved serviceable. De Haën, likewise, in the colic named *shut*, or that of Poitiers, was successful in opening the bowels, after they had been obstinately shut for fourteen days, in the case of a student whom he attended, by means of a very strong purging infusion, the dose of which was four times greater than usual, but given at intervals, until the belly was loosened †. Likewise a method, the opposite of this antispasmodic one, is recommended by Dubois and Bouvert, by employing which they affirm having very quickly removed such colics, and which consists in acrid clysters, emetics, and rough cathartics, interposing opiates. If the disease proceed from retention of the perspirable matter, if from fevers being imperfectly resolved, or from arthritis, or scurvy,—diaphoretics and antiscorbutics are to be employed, as, the decoctions of the woods, especially *sassafras*; *viper-soup*; the juice of *succory*,

and of antiscorbutic vegetables; the bath; hot mineral springs; frictions; and epispastics. But when an austere acid, or acid drink, has given origin to the disease, sudorifics of camphor mixed with opium, and an infusion of sage; alkaline remedies; animal soups; jellies; and, lastly, the use of steel, are most proper. After having employed other remedies to no purpose, Sydenham had recourse to the balsam of Peru, to the extent of half a dram for a dose, with effect. The bark, to be taken to the extent of a dram $\frac{1}{2}$, is recommended by Petrus de Rotundis \parallel . But, in the *metallic* or *saturnine* species, if the cause be recent, it ought to be immediately ejected, and a purgative afterwards given. When the disease is at its height, besides emollient fomentations, the bath, and the usual remedies for alleviating pain (100.), it is proper to make a trial of the power of opium, which may be given to the extent of half a grain, with a little camphor, every three hours, until the pain be allayed. After it the belly ought to be relaxed by means of cathartics; after which demulcent, oily things, whey, asses, mares, or goats milk, ought to be employed for a considerable length of time, along with Venice soap. In this case, also, the employment of blisters and sinapisms produces surprising benefit \S . Bisset, besides the remedies now mentioned, contends that the bezoar mineral is a remedy of the greatest efficacy, if the disease arise from the fumes or

small particles of arsenic. He likewise recommends the application of blisters to the anterior and upper part of the thigh. When salivation comes on, he prescribes a laxative, consisting of half an ounce of a cathartic salt, boiled in wine, with aniseed ¶.

* Gesner, Platner, Spigeli, Sennert, Wepfer, Willis, Hofman, Bordeu, De Haen, Sauvages, Ludwig, &c.

† *Rat. med.* P.i. p. 4. and more in P.iii. c.ii. *De colic. piction.* which see.

‡ *De viâ. rat. in febr. acut. &c.* p. 167. Likewise Van Swieten affirms, that this bark is recommended by others in the *colica periodica*, § 757. but that by others the theriac is used before the paroxysm. Baglivi also informs us, that this colic is in a short time removed, by administering a gentle purgative three hours before the attack of the pains; and that all other kinds of pain are allayed by repeated evacuations of that kind.

|| The good effects produced in a *colica pictionum* attended with the most severe convulsions, by employing the *aqua benedicta* of Ruland, in the form of a clyster, are mentioned in the *Journ. de med.* for June 1782, p. 92.

§ Tissot (*Epist. var. arg.* p. 152.) has three histories of colic occasioned by lead, for the cure of which he recommends the tepid bath, injections of olive-oil, and syrup of marsh-mallows, of each an ounce and a half. For the drink he prescribes water, prepared with syrup of marsh-mallows. His formula for a cathartic is as follows:—R. Seri lact. lib. j. in quo solv. mann. ping. unc. j. ss. Colatur. add. syrup. alth. unc. j. nitrî gr. xij. syrup. papav. alb. et æq. naphæ ana drach. j. cujus unc. ij. omni. hor. quadrante calide sorbillentur. He applies emollient cataplasms to the belly, throwing in the vapours of warm water *per anum*, together with emollient injections every other hour. He desires one ounce of manna, dissolved in a large quantity of whey, to be given every three hours, until the belly is purged. He even proceeds as far as eight ounces, &c. more. ¶ *Med. essays and observat.* p. 92.

103. The paræsis, which frequently follows colic, and which by Tronchini is ascribed to induration of the nerves, and default of the mucus and lymph, with which they are moistened, if it be recent, and still curable, is to be treated by inclosing the limbs in the bellies of newly-killed animals; by frequent and repeated friction; by mineral hot baths; by stimulant liniments; by the external or internal employment of volatile remedies; by the ferulaceous gums, mixed with the balsam of Mecca or Peru, given internally in a small dose, and for a length of time; by weak Canary, Greek, or Madeira wines, employed sparingly; and by a change of climate. Lastly, electricity ought to be tried, to excite the nervous and muscular power. Orteschi, in his *Medical Journal*, n. xi. published at Venice in the year 1763, mentions that several have been freed from this disease by the employment of the *aurum fulminans* *. Those remedies are employed in the other varieties of colic which are best adapted to the varieties of the causes †. Moreover, the return of the disease, which—as Sydenham observes ‡, in its nature is very apt to return—ought to be prevented by the most scrupulous attention to the diet; by tranquillity of mind; by riding; by keeping up an uniform and temperate heat of the feet and belly; by watery drink; by acidulous things; by milk, and peruvian bark, especially if the colic return periodically; by steel; and keeping the bowels open.

* Tissot (l. c.), in order to remove the paresis, after previously opening the belly, applies a plaster of *galbanum crocatum*. He prescribes a bolus of camphor, benzoin, assafoetida, powder of ele. campane-root, and of balsam of Peru and sugar ground down; and desires the patient to drink over it a decoction of burdock, sassafras, and marsh-mallows, friction of the lower extremities with substances impregnated with amber, and, together with these, he recommends easily digestible food.

† See the cure of the *iæteric*, *hepatic*, *mesenteric*, and *pancreatic* species of colic, in Chapters XIII. XIV. XV. in which there is a particular discussion of the diseases of those parts.

‡ Sect. iv. chap. vii.

CHAPTER VIII.

CONCERNING BOUND BELLY AND ILEUS.

104. Too long retention of the fæces in the intestines, especially the large intestines, is named *bound belly*; but if the fæces be intirely suppressed, it is then said to be *obstructed*. The proximate cause of the complaint, therefore, consists in the difficult, or altogether impeded descent and evacuation of the excrements. This may happen, either from the languid motion of the intestines, from their relaxation, dilatation, atony, and insensibility, or, on the other hand, from extreme sensibility and irritability, or spasm of them; from defect of bile and pancreatic juice; from an insufficiency of the mucus with which the intestines are lined; from too great activity of the lacteals and absorbents; from neglect of the

natural stimulus by which we are solicited to evacuate the contents of the intestines ; from the diminished diameter of the intestines, induced by a morbid structure, either born with the patient, or occasioned by disease ; a swelling arising in them ; a spasmodic contraction ; thickness, or induration, or growing together, or compression of the coats, or complication or intus-susceptio of the intestines* ; their entering into a straitened situation, as in *hernia abdominalis, umbilicalis, cruralis, inguinalis*, and in that of the scrotum itself †.

* The *indigitatio*, or *invaginatio*, of the intestines, if it be not very great, and at the same time very strait, according to Morgagni, cannot induce *ileus*. Haller also, as both in men and in brutes he has observed such *indigitations*, unaccompanied with inflammation, easily resolved by the passing of flatus, is of opinion, that ileus can by no means arise from this cause ; “ for,” he observes, “ it is a complaint in its nature too mobile, and disposed of itself to resolution, and, if it were serious or deadly, it would indicate its violence by inflammation, and a collection of the food at that part of the intestine in which the intus-susceptio takes place. But I have never seen either kind of complaint conjoined with it.” *Opusc. pathol.* obs. xxvii.

† Morgagni (epist. xxxiv. n. 35.) says : “ Volvulus is derived either from hernia, even when inconsiderable ; or from inflammation of the intestine ; or from *intus-susceptio*, accompanied with induration, and such stricture as to completely obstruct the passage, or from other obstructing and violently stimulating causes.”

105. The remote causes of the complaint are, a warm and dry temperament ; increased perspiration ; scanty drink ; viscid, dry, sour articles of diet ; astringent, saturnine, irritating medicines and acrid cathartics ; the abuse of salted things ;

a sedentary life, hypochondriasis, and hysteria; obstructions and swellings in the lower part of the belly; morbid states of the brain and spinal marrow, in consequence of which paralysis of the intestines takes place*; the urinary bladder being any how distended; pregnancy; swellings of the uterus, vagina, and rectum; blind piles; and a good many similar causes†.

* Ruyfch, among other causes of ileus, mentions paralysis of the small intestines.

† We read of a *singular excrescence* having been observed by Meckel, formed in the great intestines, and afterwards discharged, resembling a real *hydatid*, which had impeded the free discharge of the fæces. See *Mem. des scienc. bell. lett. de Berlin*. an. 1759, p. 36.

106. If the belly be so much obstructed that the contents of the intestines rise upwards, and are expelled by vomiting, we then name the disease, with most of the moderns, *ileus*, or the *iliac passion*, or *volvulus*. For I differ from those who only bestow this name upon the *iliac pain*, or inflammation of the intestines. I grant, indeed, that these complaints often terminate in *ileus*, or are not unfrequently conjoined with it; but I contend that this is not the only and uniform cause of the complaint. Moreover, in these affections the *vomiting* and obstinate *costiveness*, which constitute the nature of *ileus*, neither seem to be constantly present, nor attended with such violence as in *ileus*.

107. Hence it appears, that its proximate cause is the inverted, or antiperistaltic motion of

the intestines, occasioned by whatever so increases the contractile power any where, that its action prevails over the peristaltic motion of the superior parts; or, on account of being more powerful, attracts to it the weakened motion of the lower parts; or, lastly, whatever so obstructs the passages, that the descent of the contents of the intestines is prevented, such are, violent spasm, convulsions, severe vomiting, inflammation, colic and iliac pains, and their causes, elsewhere enumerated (86. 87.), and all of these mentioned a little before (104. 105.)*. In the body of a woman who had frequently complained of a pain in the right iliac region, and who, after falling from a height, felt a more acute pain, and, after being distressed with a bilious vomiting for three days, was at length carried off, Meckel discovered a calculus in the *jejunum*, at the side of the right umbilical region, by which its cavity was intirely shut up†. There is likewise a curious observation of Lieutaud‡, of a boy, in whose body, about the termination of the ilium, a collection of worms, rolled into a mass as big as the fist, and completely obstructing the intestine, was found.

* To this part may be transferred the instances of *intus-susceptio*, quoted from Robin and Leblanc (99. note †). Likewise the observations of Morgagni, concerning the causes of *volvulus*, in the note upon par. 104.

† *Hist. de l'acad. roy. des scienc. et belles lettres de Berlin*. 1759, p. 35.

‡ *Hist. anat. med.* vol. i. p. 75.

THE DIAGNOSIS.

108. BOUND or obstructed belly (104.) is first announced by the intimation of the patient. Nor is it difficult to recognise the presence of *ileus* (116.). For, in the latter, either nothing at all is passed, or the discharge is scanty and thin. Somewhat, however, may be passed if the intestine be not altogether obstructed, and if the *ileus* arise from the appendages which are sometimes found in the *ilium*, falling into the ring of the abdominal muscles, and being there strangulated. The abdomen is pained, especially about the umbilicus, becomes tense, swells, and at first a loathing of food and nausea occur, followed by vomiting, first of food and drink, and afterwards of bile and other fluids, and, lastly, of putrid, fetid, and fecal matters, accompanied with the greatest degree of anxiety, and frequent faintings. Sometimes also, these symptoms are attended with fever, enteritis, hiccup, convulsions, delirium, and other fatal symptoms, which I have already mentioned as accompanying the most severe colics. Nor does it happen, that the excrements, which are collected above the obstacle, alone are voided by the mouth, but likewise those that are found beneath it; and even clysters and suppositories themselves are said to be sometimes discharged in the same manner. Which last fact, although it does not, perhaps, rest upon sufficiently-well established observations, still does not seem alto-

together to surpass belief. For if the cause, inverting the motion of the intestines, be of such a nature as no where to shut up their cavity, or not wholly to obliterate it, or even though it do occasion such obstruction, if this do not take place in the rectum,—for, as dissection has shewn, no part of the whole alimentary canal is exempt from such an affection *,—things thrown in *per anum*, in consequence of the inverted peristaltic motion, or being forced up, may be carried beyond the obstacle, and rejected upwards. But it may be said, that the valve of the colon would prevent this. This is by no means the case. For it may be so pressed upon by the matters rushing upon them, and endeavouring to pass from the colon into the ilium, that yielding and opening it leaves free access to them; as injections passing out of the mouth demonstrate †. Add to this, that sometimes the valve itself is burst; as Haller assures us ‡.

* In the ilium itself faeces are found; they are not, therefore, contained wholly in the great intestines (De Haen, *Rat. med.* vol. ii. p. 76.). Hence the vomiting of the faeces does not proceed from the colon. Morgagni also relates having observed small collections of faeces in the upper part of the intestines (*Epist. anat. med.* xxxix. an. 29.).

† The dilatation of the ilium and colon separates the opening of the valve of Bauhin, so that the faeces of the lower intestines are voided by vomiting. See Hagenott and De Haen, *Rat. med.* vol. ii. p. 71. & 72. But Hales asserts that this valve is overcome by the force of a clyster, exper. 25. *Hæmorrh.* n. 1. & 2. De Haen, p. 73. denies that this can happen in the living subject; nor is Morgagni disposed to admit it. But, in another part of his works,

(par. iii. c. ii. p. 104.), it appears from De Haen himself, that in the living subject also it is overcome; which Van Swieten likewise affirms, when speaking of the hydrostatic instrument of Martini.

‡ *Prim. lin. physiol.* n. 738.

THE PROGNOSIS.

109. BOUND belly, when it is the effect of strong bowels and great absorption, creates no uneasiness, although no stool occur for six or eight days, or more. Otherwise it may induce great and serious inconvenience, as loathing of food, tension of the abdomen, anxiety, headach, vertigo, hemorrhoidal discharges and colics, enteritis, putrid fevers, and, lastly, ileus itself. Nay, while a person endeavours with a great effort of his breath to evacuate his intestines, if he be young, he is sometimes observed to be attacked with hemoptisis, and if he be more advanced in life, or an old man, with apoplexy, in consequence of the blood-vessels of the brain bursting. Ileus is a disease of very doubtful issue, and full of danger. That which arises from inflammation or gangrene is always fatal; while that which arises from hernia is only sometimes so, as, according to Garengeot, it is sometimes cured. That which is occasioned by hardened feces, and other manifest causes, which can be easily removed, is attended with less danger. When fetid smelling or black matter is passed by the mouth, or when the highest debility, fetor of the mouth, small pulse, convulsions, coldness, and paleness are present, it is an indication that death is threatened. The vomiting

of faeces is generally considered as fatal. But Gængeot *, Bonet †, and Matthæus de Gradibus, mention instances to the contrary. Old men are generally carried off instantaneously; for they are frequently cut off during vomiting. A fatal instance of ileus, together with the anatomical dissection, will be found in the *Commentaria de rebus in scientia naturali et medicina gestis* ‡. If a diarrhœa supervene upon a severe iliac passion, the patient is carried off in a few hours, for it is a proof of universal sphacelus having taken place; hence a diarrhœa is fatal ||. The same thing is to be apprehended if a swelling of the belly come on, and a copious discharge of flatus take place §. If suppression of the urine, strangury, inflation of the belly, or convulsion supervene, the complaint is fatal ¶. Likewise red or livid spots, which sometimes appear externally, denote that the inflammation of the intestines has terminated in gangrene **.

* *Mem. de l'acad. de chir.* vol. i. P. iii. p. 355.

† *Med. septentr.* vol. i. lib. iii. sect. xv. c. xxix. xxx. xxxii.

‡ *Tom.* xviii. p. 400. || *Felici del presag. med.* p. 164.

§ *Baglivi in Append. ad dysenter.* ¶ *Id. ib.* l. i. c. xiii.

** *Van Swieten*, § 848.

THE CURE.

110. Binding or obstruction of the bowels will be removed by those remedies which are indicated by a knowledge of the causes (104. 105.). But as these have already been sufficiently dis-

cussed in former chapters, it is unnecessary to repeat them here. Upon the whole, the patient will receive benefit from exercise; from friction of the abdominal region; from moist and glutinous food; from drinking copiously; from vegetables and coarse bread; from occasionally taking some honey, or manna, or cassia, or some of the neutral salts; and from the frequent employment of clysters. Redi, before meal-times, recommends a quarter of an ounce of the pulp of cassia, until the bowels be relaxed. He likewise prescribes the employment of fallads made with vinegar, prepared with an infusion of manna and senna. Gorter * prescribes the *pilulæ gummosæ*, some recommend those of Becher, others the balsamic pills of Hoffman, or the Frankfort pills, and so forth. Likewise suppositories of salt butter, or *sul gemmæ*, agaric, and colocynth received on honey, are advantageously introduced *per anum*, that the belly may be excited to action. It may likewise be opened by means of the bath; by steam †; by fomentations; by the ointment of the *arthanita major* applied to the umbilical region, which, in children, has been frequently observed to afford relief. An injection of the juice of beet is recommended by Petrus de Rotundis, to which he considers nothing as being superior ‡. Some recommend walking with the bare feet upon a stone pavement sprinkled with water; but this is not always unaccompanied

with danger. It will be necessary, however, in every case to consider the causes.

* The *pilule gummosæ* of Gorter are as follow :—R. Gumm. ammon. drach. ij. Sal. polychrest. drach. ij. Gumm. sagapen. drach. j. Diagryd. scrup. j. M. & c. s. q. bals. peruv. ft. pilul. Alois scrup. unum quotidie.

† Hamilton (*De prax. regul. et febr. miliar.*) says, that for relaxing the belly, sitting above the steam of warm water answers the purpose. Fomentations are recommended by Barbeyrack. *Med. form.* p. 339.

‡ *De viâ. rat. in acut.* p. 119.

III. In ileus the motion of the intestines cannot be restored to its natural standard but by removing the irritating cause, allaying the spasm, and opening the bowels. To this part may be transferred most of the remedies already proposed to allay vomiting (52.) and to remove pains of the intestines (101. 102.), for we must employ, both by the mouth and anus, laxative, emollient, and aperient remedies. Particularly clysters, accommodated to the cause of the disease, are preferred. If they require a stimulus, *sal gemmæ* ought to be dissolved in them, or a lenitive electuary, or honey of roses. Internally the oily remedies elsewhere recommended may be employed. Van Swieten affirms, that in the most severe case of ileus linseed-oil, taken to the extent of a pound, has repeatedly rescued the patient from the jaws of death *. But as the vomiting is for the most part an impediment to the internal employment of remedies at the very beginning of

the disease, the *anti-emetic* remedy of Riverius, consisting of one or two scruples of salt of wormwood, and two or three ounces of lemon-juice, ought to be drunk off while in a state of effervescence. To this saline mixture may be added, or in place of it may be substituted, the powder of columbo-root, which I have elsewhere recommended on the authority of White, Percival, and Johnston †. Leack, in order to render it more bland, adds to it spermaceti and gum-arabic. It is necessary likewise to employ other mixtures, which, on account of their gratefulness and smell, rouse the action of the stomach and general strength, and to them may be added some of the sedative and antispasmodic remedies. They may therefore be prepared from the distilled waters of peppermint, citrons, orange-flowers, and cinnamon; from the *confectio alkermes*; from theriac; from diascordium; from laudanum; from the syrup of kermes, or of citron-peel.

* § 608. 609. † See concerning *Fevers*, Vol. II. par. 496.

112. We must inquire carefully, whether the complaint arises from hernia. In which case its replacement is immediately to be attempted*; and, if this do not succeed, we must quickly have recourse to the operation for hernia †, which ought not to be put off beyond twenty-four hours. There is no occasion for repeating what ought to be done when indurated fæces obstruct the intestines, which has been elsewhere mentioned at greater length, especially in par.

101. &c. I must not, however, pass over in silence quicksilver and leaden drops, as remedies by which, it is asserted by people of the first celebrity and experience, that the bowels have been frequently opened, in cases of the most desperate ileus. And, with regard to the quicksilver, some advise taking in a pound or two of it; while others are contented with half a pound. Those practitioners, however, act most cautiously, who limit the quantity of it from an ounce to two, or sometimes even four ounces. Blanchini is so averse to the use of mercury, that he is unwilling to give more than one dram, or four scruples, every two hours, in volvulus. Likewise leaden drops, of the same weight, are recommended to be swallowed. For they are of opinion, that both remedies, by their weight, resolve the indurated fæces, or intus-susceptio of the intestines. But, that the remedy may act the more successfully and gently, it is generally taken with a few ounces of oil of almonds. We must guard, however, against employing these in the ileus which arises from inflammation, or when gangrene is apprehended, as in an advanced stage of the disease, or in that which is kept up by incarcerated hernia; for in that case they will occasion more harm than good. Ghisi of Cremona observed two cases of volvulus, in which three ounces of crude mercury had been given, but too late; and he found, in the dead body, part of the

ilium gangrenous and lacerated, through which the mercury, together with the fæces, had escaped into the cavity of the abdomen †. Moreover, we must take care that the mercury is not retained too long in the intestines, for there would be a danger of a ptyalism being occasioned. Nor is it altogether safe to employ them in every case of intus-susception; for, if the upper intestine be protruded into the lower, it is affirmed that no advantage can be derived from it. Sometimes the hardened fæces remain so fast in the rectum, near the anus, that they can neither pass on, nor admit the introduction of medicines to soften and evacuate them. In that case surgical aid becomes requisite, and a proper instrument must be employed to divide and extract them.

* In the crural hernia, while it is replaced, the intestines ought to be forced obliquely towards the umbilical region. In the inguinal hernia, on the other hand, it ought to be forced obliquely towards the ilia. In old herniæ, when a considerable prolapsus of the intestines has taken place into the scrotum, where the ring is for the most part too lax, frequently the intestines cannot be replaced, on account of the accumulation of fæces. In that case nothing is better than the employment of acrid injections, and cathartics; which last may be employed at the very beginning of the complaint, before severe symptoms or inflammation come on. Epsom salt, to the extent of two ounces, dissolved in a pint of water, and given at intervals, has produced surprising effects. The scybala are quickly dissolved, the intestines replaced, and the belly relaxed. Likewise the perpendicular posture, with the head turned downwards, and the feet elevated, contributes greatly to the reduction. It is generally sufficient to rest upon the back, with the head somewhat raised, and the shoulders depressed, the nates elevated, and the legs and knees being retracted. Emollient and antiphlogistic remedies, with venesection, are recommended as be-

ing proper, by Gourfaud, in the *incarcerated*, *crural*, or *inguinal*, and *complete* hernia; because the narrowness and nature of the parts occasion a rapid inflammation: but the opposite of these in the habitual hernia and laxity of the ring. In the former case, bleeding ought to be quickly set about; in the latter, it may be frequently put off for some days without danger; for we have instances of their having been successfully replaced, after eight or ten days, or even more, without inflammation and gangrene having been induced. In it also strengthening remedies are likewise proper. Generally in the greatest degree of relaxation these last are safer. When a quantity of air inflates the intestines, and occasions a difficulty in the replacing of them, the application of ice may be tried; in other cases it is hurtful. See *Mém. de l'acad. roy. de chir.* tom. xi. p. 411.

The causes of incarcerated hernia are various, and consequently the method of cure must be varied according to the diversity of these causes. It may be worth while to consult a dissertation entitled *Sur la différence des causes de l'étranglement dans les hernies*, par M. Gourfaud, to be found in the same work, p. 382.

† Concerning *celotomia*, or the operation for hernia, may be read the dissertation of Louis, which is to be found in the same volume, p. 442. Whether *gastrotomia*, or the opening of the abdomen, can cure the iliac passion arising from intus-susceptio of the intestines, is inquired by Heuin among the ancients, and, among the moderns, particularly by Barbetta and others; and he concludes in the negative. *First*, Because the cause of it is uncertain, and it cannot be ascertained by unequivocal symptoms, which are in common to the other causes of the iliac passion. *Secondly*, Because the causes are manifold, and intus-susceptio is a less frequent one. *Thirdly*, Because the operation is full of danger, and would frequently likewise be unnecessary. *Fourthly*, Because the place where the cause of the complaint exists cannot be determined. He has the concurrence of Saviard (*Op. chir.* 34.), and Van Swieten (§ 964.). See tom. xi. *Des mèm. de l'acad. roy. de chir.* p. 315.

† Lett. v. *Intorno alle f.b. maligne*. p. 240.

‡ *Letter. mediche*, let. i. p. 65.

113. Moreover, in ileus the remedy of most immediate service is said to be the smoke of to-

bacco injected *per anum* *; in place of which, if I mistake not, may be equally well substituted, an injection of the decoction or infusion of it, which I have already recommended in the colic pain (101.). Some even propose forcing air by means of a bellows into the intestines, to remove the complications of them. After other remedies have been tried to no purpose, the belly has sometimes been relaxed by suddenly throwing cold water upon the feet, legs, and bare belly: for many things, as Home, after Celsus, affirms, in a dangerous case, are attempted with propriety, which otherwise ought to be omitted. But it is safer to employ the tepid bath. Hazon, in the case of a pregnant woman, after trying all other remedies to no purpose, cured a most severe ileus by the repeated use of the tepid bath, in consequence of which the foetus was brought forth, and the woman freed from her complaint. Twice a-day before the abortion, and once after it, she had recourse to the bath †. Lastly, tepid water was gently and gradually thrown into the intestines by means of a syringe. It has been frequently known to allay ileus, as we are assured by De Haën and Videmari. But the employment of it seems now to be laid aside; which, had it been found to be useful, doubtless would not have happened so readily. Sydenham, for the removal of an ileus, ordered the patient to lie with a living whelp close to the naked belly for two or three days. Upon the bowels being

opened, and the vomiting and other symptoms disappearing, we must not too soon desist from the remedies, nor depart from the thin and fluid diet, or neglect the prophylactic precautions; for the disease is very apt to return.

* An instrument is described by De Haen and Schaeffer; but a still more simple one by Gaubius, in his *Adversaria*, p. 45.

† Vandermonde, tom. iv. Jan. 1756, p. 110,

CHAPTER IX.

CONCERNING MORBID STATES OF THE HEMORRHOIDAL VEINS.

114. THE rectum is liable to certain morbid conditions which proceed from the hemorrhoidal veins. These veins are either *internal*, or superior; or *external*, or inferior. The former flow into the *mesenteric branch*, and afterwards into the *vena porta*, the latter into the *hypogastric branch* of the *vena cava*, into which hypogastric branch, or *internal iliac*, likewise the *vena pudenda*, and other veins from the neighbouring parts flow. It is to be remarked, however, that these veins, both internal and external, as Winslow has shewn, have a wonderful communication by anastomoses.

115. According as the blood returning through these veins differs in its condition, various morbid states take place in them; the two principal,

however, are swelling and pain in them, or a various, and frequently immoderate discharge of blood from them. Hence flow the varieties of the piles. They are either *internal* or *external*, *blind* or *shut*; as also *painful* or *raging*, *open* or *flowing*. The flowing piles are distinguished into *spontaneous*,—which open, by a provident effort of nature, to free the system of a superfluous quantity of blood, as happens in the menstrual discharge,—and into *not spontaneous*, which depend on a morbid condition. These last, again, are divided into *critical*,—which pour out blood, proving salutary to the patient;—and into *symptomatic*, which are the reverse. The *blind* piles, according to the size and figure which they assume, are named, some *small*, some *great*, as also *verrucales* and *vesicales*, resembling grapes or mulberries: and, lastly, from the badness or benignness of their disposition, they are called *malignant*, *cancerous*, and *gangrenous*, or *mild* and *benign*.

116. The proximate cause of the *blind* piles is the stagnation of blood in the hemorrhoidal veins; that of the *flowing* piles is the same as that of other hemorrhages. The remote causes are considered as being, chiefly, plethora; bad-conditioned fluids; a peculiar acrimony; a hypochondriacal and melancholic temperament; compression, internally or externally, of the veins themselves, from a spasm, or from obstruction of the viscera,—especially of the vascular system,

both of the mesenteric veins and of the vena porta,—from the gravid uterus, from difficult labour, from indurated fæces, or from their containing foreign matters, from contraction of the rectum falling down through the sphincter; excessive relaxation of the veins, whether from external violence or existing naturally, and as it were proceeding from hereditary disposition; the absence of the powers which promote the return of the blood through the veins; retention of the fæces; the body continuing too long in the erect posture; suppression of natural or customary evacuations; the irritation of some dysenteric acrimony; a critical effort of the system; depravation of the mucus; any irritation occasioned by cathartics, whether containing rhubarb or aloes*; venereal, aromatic, and vinous remedies; diseases of the vagina and bladder; and the frequent application of leeches.

* Lange (*Miscel. verit. fascic. i. p. 8.*) observes: “Aloes excite the piles. Now, the same substance proves fatal to cats, wolves, dogs, foxes, and birds. It must therefore be classed among the vegetable poisons. Its use, then, ought to be thrown aside.”

THE DIAGNOSIS.

117. THE *external* piles are obvious to the sight; the *internal*, again, are discovered by means of a probe, or by introducing the finger into the anus. The blind piles are dilated into small tumours, like varices; sometimes they equal

the size of a chesnut, or even that of a pigeon's egg; at other times the whole ring of the anus appears swelled and unequal; sometimes the extremity of the rectum is so turned out as to resemble the nates of an ape. They must be distinguished from *rhagades*, *thymi*, *condylomata*, *fici*, and *cristæ* *. The true piles resemble the heads of veins, are for the most part black, or intensely red, or round, and affect the veins otherwise from what happens in the morbid states already mentioned. In the flowing piles, the blood passed is distinguished from other hemorrhages of the bowels, by its being poured out in consequence of the pressure of the fæces, for the most part following the discharge of fæces, but sometimes, indeed, preceding it a little before.

* *Rhagades* are fissures about the anus. *Condylomata* are hard pellicles, or the indurated rugæ of the anus, oblong, of an uniform colour, and not reaching to the veins. *Thymi* are fleshy tubercles, of a white or red colour, but without pain. Likewise, *fici* are tubercles larger than thymi, of a livid colour, and painful, and differ from the piles in being fleshy. Lastly, *cristæ* resemble the crests of a cock's comb.

118. They generally affect pale, melancholic, and hypochondriacal people. When they threaten an attack, a pain, generally affecting the os sacrum, accompanied with a particular itching at the anus, or rectum, is felt; more frequently, however, accompanied with a *teneſmus*, and an uneasy solicitation to go to stool, although the fæces be neither hard, nor come off with difficulty. In some patients they are less, in others more severe,

nor do they remit of their violence, unless blood be drawn. Frequently loss of appetite, a constant pain, particularly distressing when the patient is at stool, vertigo, headach, and sometimes fever, supervene.

THE PROGNOSIS.

119. The *blind piles* are either resolved, or become indurated, or, in consequence of inflammation being superinduced, terminate in abscess. When a small quantity of bloody pus is discharged from them, generally a detumescence of them easily, but gradually, takes place, without any other bad consequence. But, if the suppuration be severe, it frequently leaves a fistula; in the same manner as those of old standing, or which have been much irritated, frequently terminate in ulcers, and other bad consequences. In children and young people, the discharge of them denotes a weakly condition, and, as in such subjects it is easily checked, it paves the way to chronic complaints. When it occurs after the thirtieth year of life, and returns at stated periods, it is of more favourable omen. It is extremely salutary when it happens in a plethoric habit, otherwise in good health; lastly, when it recurs at stated periods about the fiftieth or sixtieth year of life. If in such persons it be suppressed, very alarming diseases suddenly come on. But, if it be immoderate, it usually induces cachexy, dropsy, and consumption. In severe

diseases, if the discharge be unusually copious, and alleviate or remove the disease, it proves *critical*; but the *symptomatic piles* indicate the contrary. If, instead of blood, they pour out mucus, or white or ichorous serum, it denotes relaxation and obstruction of the glands; straitening of the intestines; or ulcers, scirrhus, cancers, and fistula.

120. The *flowing piles* chiefly remove plethora and bad-conditioned fluids. Hence Hippocrates observes: "Those who are afflicted with piles, are attacked neither with pleurisy, nor peripneumony, nor phagedenic ulcers, nor furunculi, nor termintha*, nor, probably, with lepra, nor other diseases †.—When the hemorrhoidal discharge occurs in melancholic and nephritic patients, it is a favourable symptom ‡.—If varices, or the hemorrhoidal flux, attack people labouring under insania, the complaint is resolved §." Galen says, that "melancholia and nephritis are cured by the piles," as evacuating the grosser part of the blood. Likewise, in the *Goacæ Prænotiones* it is written: "The piles supervening in apoplectic persons is salutary §.—When a suppression of the expectoration takes place in phthysical persons, it induces madness; and, in such a case, the piles appearing affords a favourable symptom ¶."

* *Termintha* are blackish-green tumours, resembling the fruit of the turpentine-tree.

† Lib. vi. epid. sect. iii. text. xxviii. and lib. *De humorib.*

‡ Aph. xi. sect. vi. || Aph. xxi. same sect. § Coar.
m. 478. ¶ Ibid. n. 437.

THE CURE.

121. IN the *blind, painful, and inflamed* piles, opening a vein in the arm, or even in the foot, as well as the application of leeches, affords relief. If obstinate swelling be present, it may even be proper to open the piles. They must be softened, however, by means of an emollient, anodyne, resolving fomentation; by a cataplasm, or liniment. Lange affirms, that the pain may be relieved by pottage made of tart apples and red wine boiled together, and applied by means of a linen rag at different times to the anus*. The flowers of boiled mullein, elder-leaves, boiled to a pulp, or bruised, and frequently applied, are recommended by Riverius. An excellent liniment is composed of the juice of the *semper vivum*, or purslane, and butter. Horst, and several others, warmly recommend an ointment of flax-weed, which is prepared from the leaves and flowers of the flax-weed boiled in hog's lard, and expressed with the addition of the yolk of an egg. Nor must the *unguentum populeum nutritum*, linseed-oil, the milk of cocoa, and the oil of the yolks of eggs, &c. be deprived of their praise. Likewise the bowels must be kept open by means of injections, clysters, cathartics of cassia and manna, or some neutral salt. The flowers of sulphur, given in the pulp of cassia, are said to open the

blind piles, and to stop the discharge when immoderate.

* *Miscel. variat.* fascic. i. p. 7.

122. The hemorrhoidal discharge, when immoderate, is allayed by venesection, by a decoction of tamarinds or prunes, of the urtica mortua, of sorrel, of the green bark of oranges, of simarouba; the powder of myrobolans; tablets of amber; pills of bdellium, flowers of sulphur, with flowers of cassia, the fungus melitenfis, corals; terra sigillata; applying externally mineral acids and astringents, such as I have recommended in Vol. IV. Chap. XII. in *Epistaxis*. But, when the hemorrhoidal flux is habitual, we must guard against stopping it intirely. For the piles are generally by surgeons improperly cauterised, and checked by other remedies. But Hippocrates observes: "When a person is cured of a long-continued hemorrhoidal discharge, if the bowels be not at the same time kept open, that there is a danger of dropfy or tabes coming on *." If the usual evacuation of piles has been suppressed, it may be recalled by opening a vein of the foot, by pills of aloes, myrrh, and saffron; by fomentations applied to the anus; by the vapour of warm water; by rubbing on them fig-leaves; by the internal use of steel, and the like.

* Aph. xii. sect. vi.

123. According to the variety of the causes by which the piles are excited, sometimes aperients, at other times correctives, and sometimes sapon-

aceous or strengthening remedies, are indicated. Hence neutral salts; the juice of succory, agrimony, nose-smart, borage, fumitory, trifoil, milfoil, and plantain; steel; whey, or milk itself, if nourishment be required, are recommended. Lastly, the mineral waters are most efficacious for washing all impurities out of the body. The food ought to be of a bland kind; nor are acrid or aromatic substances admissible. Violent exercise both of body and mind ought to be avoided.

CHAPTER X.

CONCERNING WORMS OF THE INTESTINES.

124. THERE is scarcely a part of the human frame in which worms have not either been found, or alleged to exist. But they are most frequently situate in the intestines; and are very various in kind and size. The principal kinds of them are, the *lumbrici*; *ascarides*; *cucurbitini*; and the *broad worm*, which also has the name of *tænia*, *folium*, and *vermis solitarius*, because it has been supposed, though improperly, that several of them do not nestle together in the intestines. The *lumbrici*, which are generally situate in the small intestines, are tapering, of a white colour, sometimes dusky, and from six or eight inches, to a foot, or two feet long; in si-

gure resembling earth-worms, but, in point of structure, slowness, and hardness, very different from them. The *ascarides* are tapering, and likewise white, but very small, the larger ones scarcely exceeding half an inch in length; very like the mites growing in cheese, and for the most part confined only to the rectum. They differ from the mites, on account of undergoing no change; and from the lumbrici in being very small and numerous *.

* See Van Phels. *Hist. phys. ascarid.* Leovard. 1768.

125. The *cucurbitini* in some measure resemble the seed of the gourd, or rather cucumber: whence their name. They are supposed generally to nestle in the large intestines, and are frequently passed mixed with the fæces. Lusitanus and Loulet named them *ascarides*. Vallisner was of opinion that the broad worm, or tænia, arises from their being joined together, and disposed longitudinally. This is denied, however, by modern authors, who confess, notwithstanding that the tæniæ, which they name the *cucurbitinæ* of Pallas and Plater, and the *cucurbitinæ articulæ longioribus* of Bonet, frequently casts their old articulations at the extremity, and they pass into living and moving cucurbitini; which I myself have more than once had an opportunity of observing. The cucurbitini are familiar to the Germans, to the inhabitants of the Netherlands, and to others of the inhabitants of Europe.

126. Be this as it may, the tænia is a broad

worm, with distinct joints, frequently ten, twenty, thirty, and even a greater number of feet in length. Several species are described by physicians, besides the one which appears to be formed by the junction of the cucurbitini, which was mentioned in par. 125. Two others, in particular, are deserving of notice, namely, the *tænia capitata*, which is found to be particularly hostile to the inhabitants of Switzerland, and to quadrupeds; and the *tænia acephala*, or *non capitata*, both of which consist of smaller joints, but constitute one single worm, as appears from dissection, from the examination of them by means of a microscope, and from injecting them. They are said to lurk chiefly in the small intestines, but have frequently been discovered in other parts of the canal besides. Whoever is desirous of fuller information concerning the *tæniæ*, may consult Valisner, Plater *, Hildanus, Le Clerc †, Andry, Raullin, Gontard, Linnæus ‡, Vogel ||, Bonet §, and other naturalists.

* The *tænia prima artic. min.* of Plater, and the *tænia secunda*, or *vermis cucurbitinus* of the same. See *Prax. med.* Plater.

† The *tænia prima* of Le Clerc. *Hist. des vers* pl. v. f. 1. pl. vi. f. 2. pl. vii. f. 1. pl. ii. f. 1. 2. 4. The *tænia secunda* of the same kind. *Ibid.* pl. i. A. and pl. ii. &c.

‡ *System. natur.* The *tænia vulgaris*, and *tænia lata*; the *tænia oculis marginalibus solitariis*, &c.

|| *De cognosc. et curand. hum. corp. affect.* The *capitata* & *acephala*; and the *tænia cucurbitina* of the same.

§ *Mem. present. a l'acad. des scienc.* T. i. *Tænia a anneaux courts*; and the *tænia a anneaux longs*. Likewise the *tænia*, or *solum a epines et anneaux* of Andry; and the *solum sans epines* of the same. Likewise the *umbricus latus* of Syson. *Engl. Philos. transf.* an. 1683, n. 146. &c.

127. Besides these kinds of worms, there is likewise found in the intestines of men the *fasciola*,—which is not articulated, but thicker and fuller than the *tænia* itself,—and the *trichuris*, namely, a very slender thin worm, of a shining pellucid appearance, of a round taper body seven lines long, and with a thread-like proboscis fifteen lines long. It for the most part infests the *rectum* and *cæcum*, and sometimes also the stomach. The description of them may be found in Roederer * and Wagler †, and also in Fabrici, who names them *lumbricelli aciculares*. But there are many other worms besides, and their varieties are described by medical writers in rare cases, namely, *black*, *green*, *red*, *hairy*, *cornuted*, and possessing singular heads, hideously ugly in various respects ‡.

* Goett. Gel. anz. 1761, n. 25. † Dissert. de morb. mucos. &c.

‡ Paullus Lupius observed a particular species of worms, named *podura dutisca* of Linnæus, of which mention is made in the *Italian Journal*, *Avvisi sulla salute umana*, ann. 1780. In the same *Journal*, published at Florence by Targioni, ann. 1782, n. 50. more information concerning them will be found. Rosenstein also ought to be consulted. *Malad. des enfans*, &c.

128. Physicians and philosophers have long contended concerning the origin of worms in the human body. Nor have they hitherto drawn any certain conclusion. But the kind of worms named *lumbrici*, the like of which have no where else been detected, and their frequent occurrence at every time of life, and in both sexes, not even with the exception of newly-born children, and

those at the breast, nay, the foetus itself, in which Hippocrates has shewn, that broad worms have sometimes been found *, seems to favour the opinion of those who imagine that these animalcules are generated in the body. Whether or not the same may be affirmed of the *ascarides*, of the *cucurbitini*, and of the *tæniæ*, it is not easy to tell. This only seems confirmed by experience, that some things favour the generation and propagation of them, that other things irritate and excite their fury, so that either from their number, and from their consumption of chyle, or from the bad exhalations and excrements proceeding from them, or from their pricking or irritating the intestines, they occasion no small mischief. The generation of them is promoted by all those things which afford them a proper nidus, or aliment, as viscid and farinaceous legumina; the abuse of animal food; fruit; milk, and articles prepared with it; a weak and lax habit of body; moist and warm air; living in marshy situations; the drinking of impure water; sluggish bile; and similar causes; in consequence of which viscosity is collected more copiously in the intestines. Among these also may be enumerated, sweet articles, and things prepared with sugar; but Redi has observed them, particularly the lumbrici, writhe themselves, and convulsed, in consequence of sweet and acid juices being poured upon them.

* Lib. iv. *De morb.* xxvii. n. 2.

THE DIAGNOSIS.

129. No age, as I have already said, appears to be exempt from worms; but least of all infancy and childhood, in which we may therefore always suspect the presence of worms. But infants and children are much more frequently distressed with *ascarides* and *lumbrici*; men with *cucurbitini* and *tæniæ*, and sometimes also with *fasciolæ* and *trichurides*, but women still more frequently than men; so that every period of life is liable to some of those species of worms. Worms for the most part lurk in the system without betraying themselves by sufficiently certain marks. For the symptoms are generally either obscure or equivocal, as various and different causes frequently occasion the same effects, or deceive us with a similarity of appearance. For it not unfrequently has happened, that worms have been found when no suspicion of them had been entertained; or that they have been altogether absent when many symptoms seemed to indicate their presence; which last fact has been confirmed by two cases adduced by Todd*. Therefore, the passing of worms by the mouth or anus is the only thing which removes all doubt in the case of an ambiguous diagnosis.

* *Collect. fec. med. Haunien.* p. 21.

130. It may be observed in general, however, that persons afflicted with worms are for the most part languid, and affected with nausea; sometimes,

likewise, that they have a morbid appetite, though their body at the same time receives no nourishment, but pines away; that an acid exhalation is emitted from the mouth; that they are occasionally harassed with a slight dry cough; that they are apt to be attacked with fainting; that they are bedewed with a cold sweat; that the colour of their face varies, being sometimes palish, sometimes red, but most frequently pale; that a dilatation of the pupil, or *mydriasis*, happens*; that a more copious discharge of saliva takes place; that they are distressed with considerable thirst; that they are frequently convulsed, especially infants and children; that they are distressed with alarming dreams; that they grind their teeth; that they frequently attempt to swallow as it were a bolus sticking in the throat; that they turn round upon the belly, which is for the most part swelled and tense; that they are distressed with colic pains, or cardialgia, or a sense of gnawing about the umbilicus, which is denoted by the complaints and writhings of the patients, and their applying their hand to the belly; that sometimes they are more affected when fasting, and relieved upon taking food; that the belly is sometimes bound, sometimes loose; that ash-coloured, whitish, or green stools, generally emitting an acid smell, are passed; that they are subject to a very troublesome itching of the nose, and occasional dropping of blood from it; and that they are affected with shifting fevers. Baglivi supposes,

that a very small pulse, and hiccup, in children always denote the presence of worms †. The pulse is generally irregular, obscure, and deficient. To these symptoms others add, tremors, the cynical spasm, contortions of the eyes, and flushing of the cheeks. Rhan informs us, that mydriasis is frequently a symptom of worms in the intestines ‡. But Cocchi remarks, that sometimes almost all the symptoms of the hypochondriac affection are induced by worms. In a particular epidemic fever, which Lepecqui de la Cloture named the *putrida verminosa* and *maligna*, and which was of the nature of the *gastrico-putrida verminosa*, he observed as a particular symptom the gnawing sensation of the stomach §.

* Rhan, *Dissert. de visc. abdom.* 1771, p. 20.

† *Giornale di med. di Venez.* 1774, p. 217. ‡ L. c.

§ *Bagni di Pisa*, p. 228. § *Observ. sur les maladies epidemiq.* p. 91. See Vol. I. Of Fever, par. 386.

131. In short, there is scarce a symptom so severe which may not occasionally be excited by worms in the intestines. Boerhaave has observed them to give rise to acute, slow, hectic, malignant, putrid, epidemic fevers; to the fames canina, bulimia, deep sleep, and delirium: Bartholin to nausea, vomiting; and dysentery: Paracelsus to phrenitis: Marcellus Donatus and Schenck to catalepsy: Forest to aphonia: Lusitanus, Gruelling, Rhodius, and Moebius, have observed epilepsy; which likewise Fabius Columna

did in himself: Riverius, Hoffman, and Ludwig have observed violent and irregular fevers, syncope, a sense of suffocation, and mania, proceed from them: Moreali, and before him Ettmuller, putrid, contagious, and epidemic fevers: Tozzi, palpitations, headachs, vertigos, blindness, cough, and hiccup: Lieutaud, ileus and volvulus: Hoffman and myself, and all practitioners, especially Vogel, Schultze, Van Doevern, Störck, &c. pleurisy, ischuria, and perforation of the stomach and intestines*. In a maniac, who before his death vomited a quantity of lumbrici, Ludwig found three large *lumbrici teretes* dead, inclosed in the gall-bladder†. Lieutaud, likewise‡, in the body of a boy who had died of an acute fever, found a long lumbricus, by which the ductus choledochus was obstructed. It appeared to have been carried thither from the gall-bladder. The same author relates||, what appears to be more surprising, that he found, in the body of a woman who had died of a malignant fever, a lumbricus which had in like manner been forced into the pancreatic duct, and evidently obstructed it. In another boy he found the ilium, about its extremity, shut intirely up by a collection of lumbrici as large as the fist §.

* An instance of the intestines being perforated by worms may be found in the *Journ. de med.* Jun. 1782, p. 551.

† *Comment. de reb. in scient. nat. et med. gest.* vol. xiv. p. 664.

‡ *Hist. anat. med.* vol. i. p. 211.

|| L. c. p. 248.

§ L. c. p. 75.

132. The symptoms which in a peculiar manner seem to indicate the presence of the *cucurbitini* and *tæniæ*, are, a *gnawing* about the stomach, or a frequent and uneasy sensation of a living animal moving within; inflations of the abdomen, which subside, and afterwards return; increased appetite; remarkable diminution of the strength; emaciation; a lead or yellow colour of the face; fainting-fits; dimness of sight, and watering of the eyes*; giddiness, accompanied with falling; tottering of the legs; and certain abrasions, like gourd or cucumber seeds, which are sometimes voided with the fæces†. In some patients there occurs an interruption of the voice, accompanied with a copious ptyalism, and pains of the stomach‡. These worms for the most part affect persons living in marshy situations, and using impure water and bad aliment. The ascarides are chiefly indicated by an itching about the anus, by frequent looseness, and by the fetor of the stools. They are equally hostile to adults and children. Hippocrates has even found them in the fœtus. In women they frequently pass into the vulva, and excite an intolerable itching there. They then not only appear in the fæces, but also in the urine. Cousini‡ mentions, that a soldier passed through the urethra a worm of the taper kind, eight inches long, and that he had been accustomed for several years back to pass many such. Do they pass from the intestines by any communication preternaturally form-

ed with the ureters? We have seen, in dead bodies, that worms have formed for themselves a passage from the œsophagus into the cavity of the thorax, through a hole in the abdominal cavity. In a girl of ten years of age, all of whose viscera were perfectly sound, but who had been suffocated by worms, Haller found the mouth and fauces filled with lumbrici, and two of the taper kind in the aspera arteria, at the seat of the heart, in the beginning of the lungs §.

* In the *Journ. de med.* for July 1783, tom. xi. p. 22. a case, in which a tænia and worms accompanied St Vitus's dance, is recorded. It is as follows: "A girl of nine years of age, for eight days was distressed day and night with continual and inordinate motions in the arms and legs. She spoke with difficulty, in consequence of her tongue being as it were held. She was collected in her mind. She walked in a ridiculous manner, dragging one foot after another. She with difficulty, and not until after making various motions, applied a cup to her mouth, and then drank with precipitation. Her eyes watered, and were in continual motion; and her mouth was variously distorted. Her respiration was free; her pulse small, quick, and irregular; she had great thirst: her urine was watery, and her belly swelled. She had a constant pain about the umbilicus; her stools were soft and mucous, and of a clay colour; her face pale, and her body emaciated, although for six months she had been harassed with an immoderate and insatiable craving for food." The watering of the eyes, emaciation, swelling of the belly, pain about the umbilicus, and the nature of the excrements, indicated worms. After premising a clyster of a decoction of rich figs, next morning was administered a medicine, composed of four ounces of the infusion of helminthochortus, two ounces of oleum ricini, and an ounce of the syrup of walnut-flowers. Four stools took place, accompanied with the discharge of five lumbrici, of various sizes. Next day the remedy was repeated, premised by four grains of sweet mercury, and twelve grains of rhubarb. Eight stools were occasioned, and a tænia was passed, five feet and a half long. Shortly all the symptoms disappeared, and the patient began to get

well. By the employment of wine and bark, she quickly recovered her former complexion and condition of body."

† Hippocr. *De morb.* iv. n. 27. 39.

‡ *Ibid.* n. 40.

|| *Æt. Helvet.* vol. viii. p. 192.

§ *Opusc. path.* obs. ix.

THE PROGNOSIS.

133. THE ascarides are free of danger, and most successfully treated. When neglected, however, they may induce tenesmus and inflammation, or ulceration of the rectum. This is not the case with the lumbrici and tæniæ; for in them greater difficulty often occurs, and the life itself is in danger. The white kind are attended with more difficulty and danger than the black or brown. When worms are conjoined with other diseases, the discharge of them denotes the greatest putrefaction, which they seem to shun. But frequently they are passed along with the excrements when the disease is drawing to a crisis; in which case, according to Hippocrates*, they afford a favourable symptom.

* *Prænot.* 72. *Coac.* 601. *De judicat.* v.

THE CURE.

134. IN the cure the indications are, the destroying and expelling of the worms; the deranging of their nests; the alleviating of the symptoms, and the removing of the causes by which they are kept up. Oily things in particular, biters, and preparations of opium, induce stupor in the worms, alleviate the symptoms, and prepare

the way for their expulsion. The strong-smelling gums, and saline substances, not only destroy the viscid colluvies in which they are produced and grow, but likewise expel the worms themselves. It is said that they are destroyed by oily and acid things, both of the vegetable and mineral * kingdoms, and by sweet substances ; but we are as yet unacquainted with any remedy which certainly destroys them. They are expelled by emetics and cathartics †, and clysters, particularly of milk and sugar, when lulled, or killed, or rendered languid by anthelminthics, as was Plenck's practice. Among these are recommended, jalap, diagrydium, sweet mercury, aloes, rhubarb, conserve of worm-flowers, or compounds of these. Boys agree better with the syrup of succory with rhubarb, or of walnut-flowers, or troches of rhubarb. Among these likewise the belly is advantageously anointed with tansy-oil, with the ointment of the arthanita major, or with hepatic aloes and myrrh, beat up with cow's gall, which proves gently laxative.

* See Vol. II. par. 301. & 402.

† Dianycere, *Journ: de M. Vandermonde*, vol. v. Octob. 1756.

135. For destroying and expelling worms, the best remedies are, the *semen fantonici* ; corraline ; the tops of tansy and hypericum ; goats-rue, or *galega* ; garden-rue ; wormwood ; valerian-root ; that of the *felix mas*, and grass ; burnt hartshorn, or hartshorn shavings ; pulverised egg-shells ;

assafoetida ; myrrh ; petroleum ; the oil of the hypericum Matthioli ; sulphuric acid ; salt of steel ; camphor ; æthiops mineral ; the powder of sulphur, or the same burnt and immersed in wine. Tode greatly extols tartar-emetic and the emetic wine, by the employment of which, he affirms having observed worms passed in two hundred cases†. Before him Brouzet had recommended the same remedy ‡. Some also recommend water into which one or two pounds of melted lead have been thrown ||. But there is a risk of the water impregnated with arsenical vapours doing harm to the patient §. Formerly, likewise, water in which quicksilver had been violently agitated for a long time, or even quicksilver itself, were highly esteemed ; at present, however, their anthelminthic powers are questioned ¶. But water impregnated with much salt has been recommended by myself ** and Leigh †† with good reason.

* See the observations delivered above, concerning the colic pains induced by preparations of lead.

† *Collect. soc. med. Haunien.* vol. i. p. 21.

‡ *Com. de reb. in scient. nat. et med. gest.* vol. iv. p. 487.

|| *Gazzet. med. d'Oltremonti*, an. 1762, n. 16.

¶ The author, in a treatise entitled, *De anthelminthica argenti vivi facultate*, published at L'ayence, an. 1753, has shewn that quicksilver possesses no anthelminthic power. He afterwards confirmed this by the æthiops mineral, and likewise by mercurial ointment, in consequence of having entered upon another set of experiments, which are still to be found among his unpublished writings. See Vol. II. *Of Fevers*, par. 402. [Germ. Editor.]

** *Trattato delle acque* f. Cristoforo, Faenza, 1761.

†† *Opuscoli med. pratiq. di Targioni*, vol. iv. p. 115.

136. Sometimes also the *tæniæ* yield to these and similar remedies. Generally, however, they more obstinately resist them. The *Edinburgh Transactions* recommend, as a specific in the cure of worms, tin filings, mixed with nearly eight times the quantity of brown sugar. They recommend six drams to be taken the first day, three the second, and the like quantity on the third day; and upon the fourth the belly is to be purged with a cathartic. Others recommend purslane, the oil expressed from nuts, and drunk with white wine †. Likewise six grains of the salt of steel, mixed with the extract of tansey, and reduced to a bolus ‡, are recommended. But we ourselves know certainly, that both tin, and salt of steel, in the same manner as strong-smelling remedies, and other salts and bitters, have frequently been of no avail ||. Rathier asserts, that the *tænia* is most powerfully expelled by the following remedy §.—R. *Pulv. sabinæ* gr. xx. *Sem. rutæ* gut. xv. *Mercur. dulc.* gr. x. *Ol. tannaceti* gutt. xij. *Syrup. flor. pers.* q. s. M. F. *bolus.* Cujus dimidia pars detur mane; altera vespere; et desuper hauriatur cyathus vini, in quo nuclei persicorum per hor. xij. fuerint macerati. Bisset also, after trying remedies to no purpose, found gum-gutta, or gamboge, to be efficacious, and as it were specific; of which he administered fifteen grains, with the extract of gentian, in the form

of a pill, for one dose §. There is a similarity between this remedy and the one which was published at Paris by the King's order, the secret of which was disclosed for a great reward by a widow woman from Switzerland, of the name of Nouffer, who had been long celebrated for the cure of *tæniæ* ¶. Its principal components are, the root of the *felix mas*, the *panacea mercurialis*, the *resin of scammony*, and *gum-gutta*. The first of these, however, is the safer, and equally efficacious **. Likewise the *arcanum* of Herrenschand, as we are informed by Vogel ††, consists of *gum-gutta*, *salt of wormwood*, and the *charcoal of ash-tree*. Vogel himself says, that he has found nothing more powerful in the removal of *tæniæ*, than pulverised fennel-root, given for some days, morning and evening, to the extent of a scruple, or half a dram, with about three grains of *gum-gutta*. Generally the more powerful cathartics are recommended for the expulsion of the *tæniæ*, as colocynth, scammony, *gum-gutta*; and even fermented liquors, and generous wines, as those of Spain, &c. by the employment of which we have not unfrequently read of *tæniæ* being expelled. But tartar-emetic, dissolved in a sufficient quantity of water, and given at intervals, appears to me to be best calculated for the removal of *tæniæ* ‡‡.

* Vol. v. art. 7. p. 103. † *Med. Journ.* of Venice, an. 1763. n. 22. ‡ *Ibid.* n. 8. an. 1764, p. 62. ¶ Tode, *Coll. med. Haun.* vol. i. p. 21. § *Journ. de med.* an. 1768, T. x. viii. p. 44. ¶¶ *Med. essays and observ.* p. 186

** Another remedy against the *tænia* has lately been published in France by order of the King, the author of which is Renaud, and which is said to have been successful even in cases where that of the widow Nouffer had failed. It is as follows: "In the evening, let a clyster of pure water, with one dram of soap, be administered. Next morning, when the patient is fasting, let a dram of the powder of fennel-root be given, mixed with a cup of water. This is to be continued for five days. After this, to the same powder there being added a quantity of the *mercurius sublimatus dulcis*, jalap and rhubarb, with a sufficient quantity of honey, let it be made into boluses, to be taken by the mouth. Let the ordinary drink be a decoction of mulberry-root."

†† *Scelia d'opuseuli*, &c. di Milano, 1776, T. xiii. †† *Acad. realett. de cogn. et cur. morb.* p. 652.

†† A woman laboured under fever, dyspnœa, prostration of strength, and a sense of pricking pain in the right side. A vein was opened, and an emetic given. The menses came on. On their ceasing she took an emetic. She had twenty-five stools. A mixture, consisting of laudanum and the *confectio hyacinthina*, brought off a *tænia* five feet long. *At. Helvet.* tom. vi. p. 216. I myself have made a similar observation in the case of a man.

Here also it is to be observed, that Raymund brought off a *tænia* by means of the castor-oil, and sometimes by a large dose of the oil of olives, or that of sweet almonds, adding to them two drams of the bark of the pulverised root of the *morus semina*. See *Hist. de la Societ. roy. de med.* vol. 2: p. 226.

137. *Ascarides* are destroyed by drinking certain mineral waters of a purgative quality; by Epsom salt, or the *sal mirabile Glauberi*; by injections of the expressed oils, or of the decoction of tansey, or of milk, sugar, and honey; and they are cleared off by suppositories of aloes and honey. Lange, in the case of infants, employs citron-seeds. Twelve or fifteen of them are bruised

together, and boiled in four ounces of milk, and afterwards vigorously expressed. The remedy is continued for three or four days, until the worms are ejected along with the fæces*. But in the cure of all the species of worms, attention must be paid to the diet, which ought to be calculated to remove the causes by which the worms are cherished.

* *Miscel. verit.* fascic. I. p. 85.

CHAPTER XI.

CONCERNING TYMPANITES.

138. To the intestines in some measure belongs the disease named *tympanites*, or *tympanias*. In it the whole abdomen swells, and is distended in such a manner, that when struck with the hand it sounds like a drum (*tympanum*). But this founding tension and swelling of the abdomen, in order to constitute real tympanites, ought to be uniform and of long continuance. For other short-continued and transient inflations of the abdomen, or such as quickly arise in acute diseases, are now properly distinguished by the name of *meteorismi**. It is also named *hydrops siccus* and *flatulentus*.

* The author has discoursed at greater length concerning meteorismi of the belly, in Vol. III. p. 367. 368. and 369. ; and the remarks there delivered may be properly called to mind here.

139. The most frequent cause of the complaint is, great distension of the stomach and intestines, or only of one or other cavity, from a collection of air. It is less frequently occasioned by air extricated in the abdominal cavity, or bursting into it from the intestines, and distending the whole abdomen; and, lastly, it is least frequently of all caused by air collected within the coats of the intestines and other viscera, that is, by an actual emphysema of all of them. Hence, according to the parts filled and distended with air, different varieties of tympanites arise, such as the *tympanites intestinalis* *, *abdominalis* †, and *emphysematicus* ‡; or the species composed of these. In regard to its cause, it is also named sometimes *spasmodic*, at other times *ascitic*, and so forth. In regard to its origin, it is at one time called *primary*, at another time *secondary*, &c.

* Smeti, Hildanus, and Saxonia, describe the *tympanites intestinalis*, and ought therefore to be consulted.

† There is a description of the *tympanites abdominalis* in the works of Valles, of Ballonius, and of Combalusier.

‡ Combalusier and Duverney treat of the *emphysematic tympanites* in the Petersburg Transactions.

140. We shall now proceed to the enumeration of the remaining causes, namely, the remote. These are, atony of the fibres of the intestines and stomach; constriction * of some part of the intestines, whether from an organic injury, or

a swelling, or from spasm; dyspepsia; aepsia; too great a quantity of air filling the intestines; colic-pains, especially spasmodic and hysterical pains, frequently recurring; debility of the whole body, and of the abdominal viscera; intermitting fevers not properly resolved, or improperly checked; crude, windy, fermenting food; drink of a similar kind, or containing spirits, or that which is too cold; a collection of mucus and phlegm in the intestines; insufficiency, or sluggishness of the bile; cathartics, or other remedies which weaken the tone of the intestines; the abuse of opium, oily things, and warm water; long-continued costiveness; or, on the other hand, excessive and obstinate looseness of the belly, or the sudden suppression of it; metastases; slight wounds, putrefaction, ulceration, and perforation of the viscera; rupture or wounding of the gall-bladder, in consequence of which an effusion of bile takes place into the abdominal cavity; pus, water, and blood, collected in the same cavity; emphysema; fluor albus; the discharge or retention of the lochia or catamenia; rickets; icterus; hypochondriasis; and the like.

* Bagard (*Trait. prat. de l'hydrop. et de la jaunisse*, par M. Marquet, P. iii. p. 160.) has shewn a particular instance of tympanites existing within the peritoneum, in consequence of which death was occasioned after twelve days. For, on the body being opened, air was discharged with a loud sound, accompanied with a fetid smell. The intestines were three times larger than usual, in consequence of which they were perforated, inflamed, and gangrenous, especially where they adhere to the mesen-

tery; the rectum, six or seven inches from its orifice, was exceedingly contracted, as if it had been tied with a ligature. All the effæces were contained in the colon. The cause was a pessary adhering at the bottom of the vagina, compressing and strangulating the intestine. A piece of long round wax introduced would probably have been the remedy. *Com. Lips.* vol. xvii. p. 691.

THE DIAGNOSIS.

141. It is discovered by applying the hand to the belly. The belly is hard and tense; there is no fluctuation, if the disease be simple, but it emits a kind of slight hollow sound; there is a frequent desire to belch; no impression of the finger remains, unless it be conjoined with *anasarca*; the patient is sensible of none, or only of a slight increase of weight; the rest of the body is emaciated; the feet seldom swell, and never so much as in the other species of dropsy. The disease at first is generally borne lightly, as it is alleviated by the eructation and flatus discharged. But, as it advances, the flatus is no longer brought up; anxiety, dry cough, and difficult respiration come on; the pulse becomes more violent and quick, and somewhat harder than natural; the belly becomes more and more bound; harder scybala are passed with the greatest difficulty; the colour vanishes; œdematous swellings or *anasarca*, sometimes even *ascites*, supervene, and then the patient dies in a miserable manner. Hippocrates observes: "When patients labour under tormina, pains about the umbilicus, and a

pain of the loins, which is neither relieved by a purge, nor by other means, the complaint passes into a dry dropsy." Aph. xi. sect. iv.

142. Sometimes, if any part of the intestinal canal be unusually turgid, there also oblong or round tumours are evident to the touch, and sometimes likewise to the sight. From the seat of the swelling, sometimes the stomach, sometimes the colon, sometimes other parts, are known to be affected. In the *emphysematic species* the swelling is plainer and more uniform, and a fainter sound is emitted. In the *tympanites abdominalis*, the abdomen, when touched, not only sends out a sound, but also, if it be struck by applying both hands to the sides, it exhibits a kind of undulation of the contained air. Which will appear still more evident, if the complaint be preceded by causes which may introduce air into the abdominal cavity, or extricate it there, and if, at the same time, the actual fluctuation of a fluid betray itself.

THE PROGNOSIS.

143. AT the beginning of tympanites there are some hopes; for it sometimes terminates favourably, especially if mere atony, or insufficiency of bile, or excess of phlegm, occasion the complaint. Even of such patients, however, more are cut off than survive. But when the complaint is advanced, scarcely any hope remains.

If it proceed from the lesion, rupture, or corruption of the stomach, intestines, or viscera, or be conjoined with watery or purulent ascites, or anasarca, it in that case is incurable. For then no benefit is received from the eructation of flatus, or from the diarrhœa; which last, if it be sudden and frequent, rather portends the patient's speedy death. But, according to Vogel, the complaint is sometimes resolved by a hæmaturia*. Sometimes the swelling of the belly falls a little, and affords a deceitful hope; but it shortly after increases again. When a *vomiting of blood* supervenes, it is almost a certain sign of approaching death, especially if fainting be conjoined with it. Loss of strength, emaciation, fever, loss of appetite, enteritis, ileus, ischuria, increase of the colic pain, inflammation of the umbilicus or intestines, and sphacelus of the legs, if they supervene, indicate certain death. Likewise, when the disease is occasioned by rupture of the gall-bladder, and effusion of bile, it proves fatal.

* *De cog. et cur. morb.* § 665.

THE CURE.

144. WHEN tympanites arises from morbid conditions of the *primæ viæ*; from *atony* and *debility*; from *defect* or *sluggishness* of the bile; or from bound belly; it ought to be cured by means of cathartics, bitters, saponaceous things, and aperients; as the *pills of Becher*, the *pilulæ tartaricæ*.

rece of Bontius, the *pilulæ de gummi ammoniaco* of Quercetanus; rhubarb; venice-soap; the *elixir proprietatis* of Paracelsus; the ferulaceous gums; the extract and decoction of wormwood, chamomile, southernwood, and juniper-berries; cascarrilla, orange and peruvian bark; aniseed, those of the *daucus Creticus*, fennel and corianders; and, lastly, steel. Likewise acrid injections of a decoction of tobacco, rue, chamomile-flowers, melilot and elder-tree; and the urine of children or calves, sometimes cold, are recommended. Some in particular advise sucking out the air from the intestines by introducing a syringe into the anus. The abdomen externally ought to be rubbed with balsams, oils, and penetrating spirits; it ought to be fomented by means of bags of flour, common salt, and carminatives applied warm; or by means of plasters of galbanum, melilot and laurel-berries; by the ointment of the *arthanita major*; or cold water, which may likewise be given by way of drink; or it ought to be surrounded with a belt, and gently compressed. Similar remedies are calculated for the *emphysematic* species of the disease.

145. If it arise from suppression of the *lochia* or *catamenia*, bleeding, the application of leeches, and gentle emmenagogues are to be employed. Antispasmodics, also, when *spasms* and *convulsions* occasion the complaint, are very proper; among which oil and laudanum, cold water, or that which is ice-cold, both internally and externally

employed, and castor, are the chief. When *putrefaction*, or an *effusion of pus*, have given rise to the disease, acids, resinous things, and antiseptics ought to be administered. Lastly, if air be contained in the abdominal cavity, it may be withdrawn off by the operation of paracentesis; although frequently, while the cause remains, the disease is not removed, or often becomes worse. When it is occasioned by excessive *evacuations*, strengthening remedies, bitters, and astringents, are the remedies to be employed *.

* An *anomalous tympanites*, which was cured by saponaceous, antihysterical, antiscorbutic, and chalybeate remedies, may be seen in the first volume of the Edinburgh Transactions, communicated by Dr Alexander Monro,

CHAPTER XII.

CONCERNING OBSTRUCTIONS AND SWELLINGS OF THE ABDOMINAL VISCERA.

146. WHENEVER any viscus becomes preternaturally indurated or enlarged, and tense, it is commonly said by medical men to be *obstructed*. Thus *glands* are said to be *obstructed*, when their size is increased, or when, from being soft they become hard, and afford resistance to the touch. Obstruction is alleged to take place, when the *extreme arteries*, which they consider as being *conical*, being rendered narrower, whether owing to a morbid state in themselves, or from another cause, are incapable of transmitting their fluids;

or when the fluids themselves have acquired such density, thickness, and visciduity, that they cannot enter into the extremities of the capillary vessels; or, lastly, when the contractility of the vessels becomes so languid, that it can no longer propel the fluids. From all of these causes they affirm, that the fluids stick and are collected in the extreme vessels, that the parts are dilated, filled, indurated, and increased, and *obstructions* occasioned.

147. But many objections seem to prevent our acquiescing in this explanation. And, in the first place, the latest anatomical observations demonstrate that the extreme arteries are not *conical*, but *cylindrical*. When a fluid, therefore, has once entered them, it cannot be prevented by the decreasing diameter of the vessels from proceeding farther. But let us grant that the fluid, either from a morbid state of the vessels, or from a morbid state peculiar to itself, sticks in them. In that case the vessels filled by it are considered by those who are skilled in hydraulics as being shut up and solid. Nothing more can flow into them, or be received by them. Hence they can neither be distended nor dilated to a greater bulk, for the propelled fluid immediately betakes itself to where it meets with least resistance: it, therefore, either flows into the free and patulous vessels, or it returns by a retrograde course. If the first happen, the capacity of the vessels may be gradually increased, to be sure, by the influx of the fluid, but

the part will not become indurated and tumefied. If the second happen, the vessels will neither be dilated, nor will the part exceed its natural dimensions. Some change, therefore, must necessarily happen in the obstructed part, on account of which it both daily increases in size, and becomes more tense from the hardness it acquires. But what can this change be but the *dilatation*, *extension*, and *repletion* of the cellular membrane, of which the viscera and glands are almost intirely composed? For if the cellular membrane be relaxed; if its empty spaces yield too much to the influx of the fluid; if they admit it too abundantly or too thick, and do not propel it with sufficient force; and if that happen slowly and successively, according as the cellular membrane is more and more weakened, or stretched by the fluid rushing into it: it is easy to understand how the cells, being gradually dilated and distended with accumulated fluid, not only shew increased bulk of the parts, but also hardness and resistance; and how at the same time some circulation of the fluids is kept up through the remaining vessels, preserving the nourishment and life of the obstructed part. The same thing must likewise happen, if the small holes in the coats of the vessels, named *inorganic pores*, or the lateral vessels, which open into the cells, in consequence of the fluid being prevented from proceeding through its proper vessels, and forced to seek a passage elsewhere, are pressed upon, dilated, and

filled: for in that case too great a quantity of fluid will be forced into the cellular spaces lying among the vessels, which, if it be moreover sluggish and viscid, will be the more capable of explaining all the phenomena of obstructions.

148. All parts of our body are liable to *obstructions*; but particularly the *liver, spleen, mesentery, omentum, pancreas, kidneys, ovaria, uterus*, and glandular bodies *. If any gland, or a particular part of the cellular membrane any where, only swell and become hard, or any lymphatic vessel become enlarged (the possibility of which, however, some of the moderns, and among them Portal, deny), various kinds of tumours arise, namely, *solitary, circumscribed, growing to membranes, frequently adhering to the surface of the viscera, strumous, encysted, folliculated, formed like hydatids*, and so forth. Likewise, according to the diversity of the nature of the obstructing fluid, and the different degrees of obstruction, or the form of the tumour, and symptoms attending it, the swelling is named *scatoma, sarcoma, scirrhus, cancer*, &c.

* A hard indolent tumour in the epigastrium has been described by the author, in *Observ. xxii.* of the work, entitled, *Observationum medicarum, quæ anatomie superscructæ sunt*, &c. collected and published an. 1764, by Benvenutus. [*Germ. Editor.*]

149. The remote causes are, a languid and weak habit of body; atony of the fibres; viscid and thick fluids; acid, sour, glutinous, fatty, astringent, and coagulating articles, either taken as medicine or food; imperfect digestion; vitiated

chylification ; long continued, or improperly suppressed fevers ; excessive evacuations ; moist air ; the drinking of unwholesome water ; the abuse of wine, or spirituous liquors ; an indolent life ; anxiety of mind ; grief ; hypochondriasis and hysteria ; spasms ; and every other thing which either weakens the tone of the parts, or deranges the proper *crasis* of the blood, or retards its motion.

THE DIAGNOSIS.

150. The account of the preceding circumstances discovers the causes from which the *obstruction* generally proceeds, and prepares the way to the *diagnosis*. But the symptoms present are, tension, weight, a fixed and dull pain, and swelling in some part of the belly. Sometimes there is present difficulty of respiration, and a deep, dry cough, which proceeds either from the diaphragm being forced up, or from the consent of the nerves. It is to be observed, however, that, when the obstruction is inconsiderable and recent, it is not easily perceived, and that only some injury appears in the action of the part affected. But, whenever any injury occurs in the functions of the viscera of the lower part of the belly, we are at once entitled to ascribe it to obstructions, because frequently such complaints arise from debility, or a morbid state of the stomach, or from depravation of the gastric and other fluids of the stomach, or from spasms. Like-

wise there is a total absence of pain, if the obstruction, in consequence of its long continuance, has acquired a *scirrhus* nature; or, on the other hand, an acute and pungent one is excited, together with a sense of burning, when it passes into *cancer*, or *abscess*. These are long protracted, and gradually increase. Lastly, a bad habit of body, cachexy, emaciation, and atrophica; slow fevers; œdematous swellings; thick, lateritious urine; ascites; anasarca; and various other species of dropsy, supervene.

151. If the liver be obstructed, according as the right or left lobe is affected, a swelling and resistance are felt in the right hypochondre, or in the epigastrium, unless it be deeper seated under the false ribs; the patient lies more easily upon the right side; and symptoms of *icterus* appear, especially if the concave part of the liver be affected. But if the *spleen* be swelled, it is manifest to the touch in the left hypochondre; sometimes it falls forwards or downwards; the patient rests more conveniently upon the left side; and when he changes this posture, and turns to the right side, he perceives on the opposite side a sense of weight and pulling. If the *pancreas* be affected, a swelling, pain, and sense of weight across the bottom of the stomach, are felt. Again, if the *mesentery*, *omentum*, *kidneys*, *ovaria*, or *uterus* be obstructed, symptoms of obstruction are manifested in the middle of the abdomen, or about the

ilia, or in the hypogastrium; and injuries of the functions of these parts are present. Swellings of the omentum are of various kinds, according as they are occasioned by a watery fluid, or by a gelatinous or oily one, or one of another nature, or by a collection of air. The hydatids, which are found in the *omentum*, according to Portal, are formed, not of the blood-vessels, or lymphatics, but of the *cellular membrane* *. For by blowing in air he changed the parietes of these tumours into cellular membrane, and sometimes discovered fat between their laminæ. These tumours can be felt in the region of the omentum. They are frequently so moveable, that, on the patient's posture being shifted, they pass from one side to another. If they abound with fatty and thick matter, and, in the progress of the disease, increase in bulk and weight, they occasion troublesome pulling and tension of the viscera to which they adhere, especially the stomach; in consequence of which frequently the most troublesome vomiting is excited †. The tumours growing to the mesentery are deeper seated, less moveable, and situate more in the centre of the abdomen. The omentum, according to Portal, is likewise sometimes affected with *emphysema*, in consequence of air being evolved between its laminæ: which likewise happens without putrefaction to hypochondriacal and hysterical people. The tumour occasioned in this

way is moveable, it is perceptible to the touch, and elastic, and is cured by riding and the employment of the bath. Schirrous tumours, as I have already observed, betray themselves by their hardness and the absence of pain. Women, who have frequently borne children, are most liable to them †. It may be remarked, however, that all the symptoms are frequently fallacious, on account of the situation of the viscera being frequently changed, or on account of complications of the intestines, and tumours growing to them, as I have elsewhere repeatedly noticed.

* *Hist. de l'acad. roy. de l'an. 1770 & 1771*, p. 541.

† *Comment. de reb. in scient. et med. gest. Lips.* vol. xxi. p. 408.

‡ In pregnancy frequently the omentum is compressed by the uterus, and rolled back upon itself, so as to be sometimes inflamed, and indurated, and to occasion tumours of various forms, hard and oblong, situate sometimes obliquely, sometimes transversely. Such tumours are found, after parturition, in the abdomen of women, and are carried about even for many years without great inconvenience. Ruysch in the body of a woman observed the omentum *two inches thick, three broad, and upwards of a span long, and of an adipose-fleshy, or scirrhus disposition.*

THE PROGNOSIS.

152. THE prognosis may be readily formed from the observations already delivered. Generally *obstruction*, when it is recent, and supervenes in young people, is resolved; but, when it is of long standing, and when it occurs in advanced life, it is almost incurable. The flow of the piles; intermitting fever; sometimes vomit-

ing of blood ; and a diarrhœa coming on, not unfrequently afford relief. Sometimes, likewise, an epistaxis has cured a swelling of the spleen, as Menghini of Bologna has observed.

THE CURE.

153. FOR removing obstructions of all kinds, the indications are, to attenuate the thick fluids ; to rouse into motion such as are stagnant ; to dilute such as are acrid ; to render fluid those which are coagulated ; to open the passages ; to allay and remove spasms ; to restore tone to the fibres ; and, lastly, to remove the predisposing causes. With which view, the bowels ought first to be relaxed, *per epicrasin*, as it is called ; and this must be occasionally repeated at proper intervals, while the other aperient and deobstruent remedies are employed. Rhubarb, crystals of tartar, soluble tartar, manna, aloes, the *pilulæ tartarææ* of Bontius, the *pilulæ de ammoniaco* of Quercetanus, and the *pilulæ de tribus* with rhubarb, are preferred to others. Likewise clysters frequently thrown in, both with the view of relaxing the bowels, and, by means of the absorbents, of pouring fluid immediately into the viscera, are greatly commended by many. Nor is it improper to let blood, at least by means of leeches, if plethora, pregnancy, or suppression of

the menstrual, or hemorrhoidal discharge, have given rise to the complaint.

154. Among the vegetables possessing an aperient property, five roots, namely, those of *parsley*, *asparagus*, *fennel*, *petroselinum*, and *ruscus*, claim the first place. In warm and dry temperaments, the root of grass, succory, southernwood, strawberries, sorrel, agrimony, fumitory, and beccabunga, are to be preferred. In lax and cold constitutions, the root of madder, fern, and turmeric; wormwood; southernwood; horehound; horse-radish; and orange-peel, seem to be preferable. The decoctions and juices expressed from these in the spring, or in a concrete form in the winter, are to be employed; to which may be added the whey of cow's or goat's milk. On the same account the best remedies are saponaceous and incisive things, as gum-ammoniac, sagapenum, and opponax; venice soap; the *terra foliata tartari*; the *liquor terræ foliatæ*; the lixivial salts; the neutral salts; vitriolated tartar; the sal polychrest; the *arcantum duplicatum*; sal ammoniac, and its flowers; tincture of antimony; kermes mineral*; and calomel. Huxham affirms, that he has a thousand-times experienced the efficacy of the *terra foliata* in removing obstructions; or he even proposes substituting in place of it, as being still more efficacious, the volatile salt of hartshorn saturated with the acetous acid†. Boerhaave, in very cold constitutions, recommends soap made of the purest alkali and di-

distilled oil, namely, the soap of Van Helmont ‡. Harvey proposes a spoonful of the tincture of the salt of tartar, morning and evening ||. It acts as a deobstruent, and excites a flow of urine. This tincture consists of two ounces of calcined salt of tartar in spirits of wine, not rectified, but of the best kind, digested in a sand-bath until the colour becomes yellow. Let it then be decanted for use. The juice of grapes newly expressed attenuates all the fluids, and opens obstructions, as Van Swieten affirms §. Farr, by means of the internal and external employment of cicuta, dissolved obstructions of the liver and spleen, from which both cough and ascites, and anasarca conjoined with tertian intermittent, had arisen ¶. Lange mentions that the extract of wormwood with venice soap, to the extent of half a dram daily, within three weeks produced remarkable benefit in the cure of obstructions of the liver and spleen **. And he affirms that, in the treatment of the atrophica of infants and children, proceeding from obstruction of the lower belly and mesentery, Glauber's salts, taken in whey, and continued for a length of time, proves extremely efficacious ††. Ledeleury recommends the decoction of fig-wort, venice soap, and ipecacuanha in small doses; and, towards the end of the disease, he employs linseed-oil with good effect ‡‡.

* Geoffroy *Mat. Med.* T. i. p. 126.
 † *morb. epidem.* T. i. p. 144.

‡ *Observ. de aere*
 † *Chem.* T. i. p. 395.

|| *De art. curand. morb. expectat.* p. 25. § § 605. n. viii.
 ¶ *Med. observat. and inquiries*, T. iv. ** *Miscel. verit. fasc. i.*
 P. 55. †† *Ibid.* p. 79. †† *Comment. Lips. de reb.*
in scient. nat. et med. gest. vol. viii. P. iii. p. 423. 424.

155. After the timely and long continued employment of these remedies, we must next have recourse to strengthening remedies, as millefolium, peruvian bark, iron, and preparations of it. Moreover, fomentations, frictions, anointing the patient with the oil of capers, that of chamomile, and wormwood; ointments and plasters, as those of arthanita, of hemlock, of frogs with mercury, the *saponatum* of Barbetta (adding occasionally gum-ammoniac, gum-galbanum, and gum-elemi), ought not to be neglected externally. In the summer-time the proper remedies are, the acidulous mineral waters, or the cathartic bitter ones, or chalybeate springs, and the bath. But nothing is more efficacious than an embrocation, first of milk, or an emollient decoction, or next, of a mineral or chalybeate water. This remedy is employed so that the fluid may fall by drops from a height upon the part affected. - In the employment of it, however, we must guard against its falling with too much force, which, either by creating pain, or increasing it if already present, might prove detrimental to the patient. When the swellings are soft and troublesome from their weight, the uneasiness is alleviated by means of bandages brought round the abdomen *. Gorter recommends living animals, or their warm viscera, to be constantly applied to the obstructed parts, as being

well calculated, by the natural heat they afford, to resolve the fluids rendered concrete by cold, or any other similar cause †.

* Portal. l. c. † *De secret. humor.* § 33.

156. In the regimen, crude, farinaceous, fatty, flatulent articles of diet, and such as readily become putrid, as well as acid and sour things, ought to be avoided. The drink ought to be the purest water, or that in which vegetables have been boiled, or which has been prepared with steel, or weak white wine taken moderately. Breathing pure air, riding on horseback, or in a carriage, and travelling, are so necessary, that the cure cannot be completed without them. What ought to be done in the cure of scirrhus*, cancer, abscess †, atrophia ‡, and dropsy ||, I have elsewhere more than once pointed out.

* Albertini, merely by the employment of the ground pine, without using any other external remedy, or any excretion following, succeeded in removing a tumour, which, to the touch, appeared to be scirrhus. Morgagni, *Epist. anat. med.* xxxix. 35. But this remedy must be avoided when a discharge of blood from the uterus takes place. *Id. ibid.* Valsalva checked scirrhus tumours of the uterus and mammæ, by employing bleeding twice in the spring-time, and twice in the autumn. *Id. ib.* Langa is very successful in the removal of tumours of the glands, and recent scirrhus tumours of the mammæ, which neither mercury nor hemlock had reduced, by means of petroselinum bruised down and mixed with the patient's urine, and afterwards applied to the indurated part. *Miscel. verit.* fasc. i. p. 26.

† Concerning scirrhus, cancers, and abscesses, see the short *Commentary on Inflammation*, Vol. I. par. 78.; as also concerning *Fevers*, par. 306. to 309. and par. 333. Vol. III. par. 387. and 389. 397. Vol. IV. Part II. par. 16. &c.

† Concerning atrophica, see Vol. IV. part I. chap. iii. and elsewhere.

|| Concerning dropsy, see Vol. III. chap. ii.; and of this Vol. part I. chap. v. part II. chap. xi.

Although the proper place for discussing the operation of paracentesis in dropsy of the abdomen might appear to be the fifth chapter, where the author, treating particularly of dropsy of the chest, treats in a general way of every species of dropsy of the human body; on account of other occupations with which I was then engaged, I had not time left for consulting his notes upon the subject. Afterwards, however, I happened, when turning over some papers of his concerning this operation, to hit upon the following observations, which I have thought fit to add here, although it perhaps may not appear to be altogether the proper place, and although they may not seem to be either new, or absolutely necessary, rather than to omit them altogether. [*Germ. Ed.*]. His own words are: "The paracentesis ought to be performed between the umbilicus and the anterior spine of the ileum. In this part there are neither nerves nor blood-vessels of any consequence, nor does the *musculus rectus* lie in the way. This place, therefore, is more secure for performing the operation. The water ought to be intirely drawn off at once, that the admission of the air may not induce putrefaction, or other bad symptoms, in consequence of its being drawn off at different times. But, that the intire extraction of the water may not be followed by fainting, and other bad consequences, a belt is proposed, the description and use of which are given by Dr Alexander Monro, in vol. I. of the *Edinburgh Physical Essays*. For, by means of this bandage, all the abdominal viscera are compressed just as when the water was present. Hence it happens, that fainting does not succeed the operation, as would otherwise take place in consequence of too great a relaxation of the viscera, and their being too instantaneously freed from their accustomed weight. Garengéot (vol. i. observ. p. 298.), before performing the operation, recommends to the patient using exercise, with the view that the thicker parts of the watery fluid contained in the cavity may be properly mixed, and thus more easily discharged. But if, after the operation, it be a doubtful matter whether or not such thick particles be retained, he proposes the injecting of barley-water in order to wash them out."

CHAPTER XIII.

CONCERNING JAUNDICE AND BILIARY
CALCULI.

157. THE shining white and red colour of the whole skin may be changed in various ways ; for it either becomes preternaturally yellow, or green, or black, or pale, or tinged with various hues. This disease is named by the Greeks *icterus* *, and by us *morbus regius* †, sometimes *morbus arguatus* ‡, sometimes *aurigo*, sometimes *bilis suffusio*. *Icterus* arises from diseases of the liver, and from the checked or diminished excretion of bile ; although, for the most part, it does not always proceed from this cause alone. Frequently, in *icteric bodies*, no morbid condition of the liver, no taint of the *ductus biliferi*, and no *biliary calculi* are observable. For the vitiated mixture of the blood or serum, or morbid condition of the lymph, independent of any vitiation of the liver, or bile, not unfrequently—as appears from the most accurate observations—occasions an unnatural colour in the whole skin, saliva, and other fluids, similar to that occasioned by the bile flowing back into the blood, and being diffused over the whole system. The former is more properly named *icterus*, and the latter less properly ||. The colour of the blood, therefore, or of its serum or lymph, deviating remarkably from its natural

condition, may be considered as being the proximate cause of this disease.

* The *Isidos viverra* is a species of wild-weasel, the eyes of which are of a golden colour. The *icteros*, a bird of the same colour, on seeing which, as Pliny mentions, the *icteric patient* used to be cured, but the bird itself died.

† It was named *regius*, because, according to Pliny, those who frequent the courts of kings are most frequently affected with this complaint.

‡ *Arquatus*, on account of its resembling the colour of the rain-bow.

|| Wedel, Paracelsus, Lange, Straufs, Bonet, *Thef. med.* vol. ii. p. 855.

158. To the remote causes belong, abundance of bile, or too great thinness of it, in consequence of which it cannot be intirely excreted, but some part flows back into the blood*; or an alkaline acrimony of it, on account of which the bile-duets are irritated and contracted; or some impediment in the branches of the hepatic duct, or in its trunk, or in the ductus choledochus, preventing the free passage of the secreted bile into the duodenum. This is occasioned, either by small clots of viscid bile, or by biliary calculi formed in the liver or gall-bladder, by which the passages of the *ductus biliferi* are obstructed; or by viscid mucus collected in the duodenum; or by the meconium in children, by which the orifice of the ductus choledochus is shut up; or by lumbrici of the intestines entering into the enlarged choledochus†; or, lastly, by the diminished capacity of all these ducts. This last, again, is diminished, either by the sponta-

neous and gradual contraction of the ducts, or by rigidity or spasm of them; or by external compression, in consequence of the congestion and swelling of neighbouring parts. Under this head come, inflammation, especially of the under part of the liver; obstruction; scirrhus; tubercles of various kinds; hypochondriacal and hysterical spasms †; acute or intermitting fever; acrid and drastic poisons, as Hoffman and others notice; colic pains; distention or inflation of the intestines, especially of the *duodenum* and *colon*; increased bulk and scirrhusity of the pancreas; indolence; long-continued slothfulness, or frequent stooping, to which certain employments, and the pursuit of literature, are liable; emotions of mind, as rage; sudden terror; grief; hard, thick, viscid food; the abuse of ardent spirits; pregnancy; a blow upon the right hypochondre; retention of the meconium; the sudden cooling of the body in swimming; cachexy; swellings and obstructions of the spleen; the bite of the viper, or that of other poisonous animals ||.

* The bile being agitated and attenuated by fever is re-absorbed into the blood, and tinges the urine and eyes nearly with the colour of jaundice; as Van Swieten remarks, § 587. Marckard, in a work published at Leipzig, an. 1778. entitled, *Medicinische Versuche*, was of opinion that icterus does not arise from the regurgitation of the bile of the liver, unless that of the gall-bladder also flows in. But his opinion is refuted by Tode, in the review of that work. See the arguments in De Haen, vol. i. *Præleſ. in instit. patbol.* p. 119. in additament.

† G. I. Beuth has shewn, that not unfrequently worms pass from the duodenum into the gall-bladder, and, by continuing there,

occasion icterus. He himself observed a very thick and large lumbricus shut up in the gall-bladder. See the *Comment. med. Lips.* vol. xviii. p. 713. Lieutaud also discovered a lumbricus altogether obstructing the ductus choledochus. *Hist. anat. med.* vol. i. p. 211. Ludwig also affirms, that he, in like manner, observed three of the lumbrici teretes in the same gall-bladder.

‡ Coe and Haberdén deny that icterus arises from spasms: but such spasms are demonstrated by instances of icterus being suddenly occasioned by passions of the mind; according to the observations of Tode, Cullen, Monro, and Drummond.

|| Galen (*De l. effec.* I. & V. c. 8.) observed a greenish colour all over the body take place from the bite of a viper in one of the Emperor's slaves. It appears also, that sometimes the body becomes yellow from the bite of various kinds of serpents. Lazzoni observed an icterus occasioned by the bite of a cat, which lasted forty days, *Ephem. N. C.* &c.

159. Icterus is divided into *primary* and *secondary*; into *legitimate* and *illegitimate*; into *critical* and *symptomatic*; into *yellow* and *black*; into *periodical* and *not periodical*; into *short* and *transient*; and into *continued* and *obstinate*. The *periodical*, or rather the *recurrent*, species is generally supposed to be occasioned by biliary calculi. These are frequently found, especially in the gall-bladder; and they are small stones of various size, figure, colour, and composition. They are found very minute, granulous, small, larger, or of very great size; angular, rough, cubical, square, quadrangular, with many angles, conical, spherical, oval, cylindrical; sometimes separate, sometimes collected into small masses; yellow, of a brown or saffron colour, pale, whitish, ash-coloured, of a whitish-brown, of a golden yel-

low, blackish, or intirely black, bluish, red, and silver-coloured; golden, greenish, variegated, pellucid like crystal, or resembling a species of chrysolith; or like gum-arabic; composed of various layers, or lamellæ, or radiated striæ; in number sometimes two hundred, three hundred, seven hundred, a thousand, and, if Fasch is to be credited, two thousand, and three thousand six hundred and forty-six; sometimes fewer in number, of the size of an olive, hazel-nut, common nut, or pigeon's egg; sometimes single, and filling the whole gall-bladder; hard, soft, and friable; generally floating in water; blazing on applying fire, as the yellow ones; or decrepitating, as most of the black or calcareous ones; or melting, and so forth *.

* See Morgagni, *Epist. anat. med.* xxxvii. Sabatier, *Tentam. med. de variis calcular. biliar. speciebus*. &c. and Boucher, *Observations sur les pierres biliaires*, &c. A case of icterus proceeding from biliary calculi may be found in the 2d volume of the *Edinburgh Physical Essays*.

THE DIAGNOSIS.

160. ICTERUS is recognised chiefly by the various colour of the skin, eyes, and urine. In the *yellow* or *bilious* icterus, the skin becomes yellow, especially about the temples, ears, and chest. The white of the eye appears dark coloured and suffused with bile. The urine is turbid, saffron-coloured, and tinges a rag dipt into it with the same colour, which other urine does not

do; nay, not unfrequently the disease itself is preceded by deep-red urine before any yellowness appearing elsewhere. The *sputum*, saliva, and sweat, as Borelli has noticed*, sometimes become yellow; a bitter taste is felt in the mouth, and there is generally present troublesome thirst. Nor are there wanting instances of persons to whom all objects appear tinged with a yellow colour, which is to be derived from the eye, cornea, and aqueous humour being completely infected†. For such is the diffusion of bile over the whole body, that the vessels, muscles, viscera, bones‡, and fat, are found of a yellow colour||. To these symptoms are added, heaviness of the body; a pain sometimes about the stomach; loss of appetite; nausea; sometimes vomiting, and agrypnia; itching all over the body, or in particular parts of it; generally costiveness, and the voiding of ash-coloured or whitish faeces, which happens chiefly when the whole bile is forced to flow back into the blood. For, if the passage of the ductus choledochus be not intirely obstructed, or if the cause of the icterus be in the cystic duct, in that case the faeces may be tinged§. Sometimes at the beginning of the complaint fever succeeds to the icterus, and seems to be excited by the sudden passing of the bile into the blood, but such a fever is frequently of short continuance, quickly disappearing. Sometimes it only supervenes upon an icterus of long standing, and proves tedious. Sometimes it precedes the icterus,

as in acute diseases; at times it is accompanied by it at every accession, as frequently happens in tertian intermittents. But when the disease is protracted long, the whole body either becomes of a palish green ¶, or in course of time the yellowness increases daily; it induces a black colour, and then the urine itself is tinged with a brown or black hue. Sometimes, however, such a black colour does not proceed from the duration of the yellow and bilious icterus, or from its greater intensity, but from swelling of the spleen, and black bile infecting the whole blood, and changing the natural colour of the body; which is easily ascertained by applying the hand, and by other symptoms of the atrabiliary complaint.

* *Centur. i. obs. 68.*

† Not only Varro, Lucretius, Sextus Empiricus, Cassius, Galen, but likewise Mercurialis, Hoffman, Sydenham, Boerhaave, Van Swieten, and latterly Durazzini, have illustrated the fact by their observations.

‡ Van Swieten, § 950. has observed the bones, and even the cartilages, tinged with a yellow colour. Likewise Beuth. l. c. and Stoll, *Rat. med. Par. iii. sect. v. obs. 7.*

|| See the *Ephemeris*, Dec. i. an. iv. obs. 194. Morgagni, *Epist. anat. med. xxxvii.* and Storck, *Anat. med. i. p. 150.*

§ De Haen, *Rat. med. P. iv. chap. iii. p. 120.* He however observes (vol. i. *Prælect. tract. de ictero*), that sometimes the faeces are white, without icterus being present. But I am of opinion, that the secretion of bile does not then go on. Some observations of Stoll, however (p. 355.), shew that the ducts carrying the bile to the intestines have frequently been found open in icteric patients, but the disease was for the most part conjoined with great inflammation of the lungs and pleura. Was the icterus, then, occasioned by spasm, or by ulcerating bile?

¶ In the *Ephem. N. C.* obs. 41. p. 61. we read, that Lanzoni saw an icteric patient of forty years of age, whose face was all over green to the throat; while the right side of the body was black and the left yellow, so that three distinct colours were observed. It is surprising that the parts which before were green gradually became yellow, and that those which were black, next becoming yellow, again gradually become black, until after the twentieth day the skin was covered all over with a yellow colour. In the same work, cent. iii. observ. 64. p. 145. Behrens relates the history of an icterus attacking half the body, in a man of seventy years of age, who, in consequence of a fit of anger, was attacked with apoplexy, and afterwards with an hemiplegia of the right side, which side was at the same time affected with icterus, so exactly dividing the body, that the right side of the nose was marked with the icteric colour, while the left was not at all. See Ettmuller, *Collect. oper. pract.* vol. ii. p. 844. Likewise Dupui, in his Inaugural Dissertation *De homine dextro et sinistro*, has a similar observation, which, however, he does not think is to be found in any other author. But, independent of those already quoted, the same observation was made by Valsalva; and Morgagni, in his 37th epistle, already repeatedly quoted, explains the phenomenon.

161. We learn that the complaint arises from a vitiated mixture of the blood, and from morbid states of the serum and lymph, if there be no sense of pain or uneasiness at the region of the liver; if a bad habit of body have preceded; if the urine do not shew the icteric symptom; if the fæces be not white, and come easily off; if a viper, or other poisonous animal, have bit the patient, or if poison have been swallowed.

162. Nor, as is generally, though improperly supposed, must we conclude, that an obstinate icterus, and which is apt to return, always arises from calculi in the gall-bladder (159.). For it has very frequently happened, that calculi have

been found in the gall-bladder, without being preceded by any symptoms of icterus. The same thing is testified by Lælius a Fonte, Pechlin, Ettmuller, Vallisner, Haller, and many others mentioned by Morgagni *, who likewise had an opportunity of seeing eighteen persons, besides four others described by Valsalva, who had had stones in the gall-bladder, notwithstanding which none of them had been affected with jaundice. Moreover, the same learned author has shewn, that, in these persons, who, from having calculi in the gall-bladder, were liable to jaundice, besides these calculi, likewise other morbid conditions of the liver were found. By attending to which circumstances, and to those afterwards to be noticed, it will appear evident that these calculi afford no certain pathognomonic symptoms, whatever others contend, and that their presence can only be conjectured. For the heaviness, pain stretching to the ensiform cartilage, the obstinate and periodical icterus, and other similar symptoms, are in common to other affections, and the effects of other causes. The evacuation of the calculi, by the intestines or mouth, therefore, is the only unequivocal symptom of their presence. Hence Morgagni proposes dissolving the *fæces*, and passing them through a sieve, in order to detect the presence of such calculi †. We must guard, however, against confounding such calculi with those which may happen to be contained in the intestines ‡. I myself have frequently

observed calculi, which were truly biliary, thrown off by vomiting.

* Epist. xxxvii. n. 31. See also Scardona, l. 3. c. x. § 10. Felici *Del presagio medico*, p. 185. and Haller *Opusc. patbol. obs.* 33.

† L. c. n. 44.

‡ Concerning calculi in the intestines, and in various other parts of the body, the student may consult Scardona, l. c. c. xi. § 1. Manetti, in the notes upon Sauvages's *Dissertations*, p. 74. and the *Gazzetta medica d'Oltremonti*, n. xlix. an. 1763, &c.

163. Biliary calculi, therefore, can occasion icterus only when, in consequence of their pointed figure, or weight, they injure and stretch the gall-bladder*; or when they are compressed by external force, or driven into the cystic duct by the bile of the gall-bladder, or by the position of the body, and compression, inducing such irritation, that even the ductus choledochus becomes spasmodically affected, and prevents the excretion of the bile; or, lastly, when entering the ductus choledochus, they remain fast there, and completely obstruct it. In both cases, either in consequence of the gall-bladder being irritated, or in consequence of its being too much distended by the abundance of bile, a dreadful pain is excited in the right hypochondre, and precedes the icterus, or occasionally returns, causing the icterus likewise to return, or aggravating it, and making the colour deeper. It is then very properly named *colica icterica*, or *hepatica*. It does not always arise from calculi; as it may sometimes be occasioned by clots of bile, or any other cause obstructing the ductus choledochus; or by the bile

of the gall-bladder itself being too thick, and having become acrid from stagnation.

* Calculi sometimes occasion hæmorrhages. An instance of a branch of the *vena portæ* being burst by them, will be found in the *Paris Medical Journal* for July 1782.

164. The icteric colic generally attacks adults, and people advanced in life, seldom young people; but especially such as are of a bilious, or melancholic temperament, and who lead an indolent and luxurious life, or labour under great mental anxiety. It first betrays itself by an uneasy tension and weight in the hypochondres, especially some time after taking food. It next occasions a sense of pain, sometimes obtuse, sometimes acute, about the region of the stomach, or *scrobiculus cordis*, like a cardialgia, with constant anxiety at the seat of the liver, and an inexpressible internal uneasiness. But, in a short time, either of its own accord, or in consequence of some carminative being employed, it ceases, as if it depended upon flatus, or some error in diet. Next day, however, the white of the eye, when attentively examined, and especially at the inner angle, is generally slightly yellow, and the urine appears more saturated than usual, and almost red; or frequently yellowish, or greenish stools are passed; and, when this happens, the colour of which I have now spoken does not always shew itself in the eyes and urine. The complaint occasionally returns, sometimes for some months, and goes off

in the same manner, without occasioning alarm either to the patient or the physician, as there is always some manifest cause, to which it may be easily referred, until at length it attacks the patient with greater violence, and distresses him longer, evidently terminating in icterus. But, as it frequently disappears in a few days, it is on that account generally considered as being *critical*, or *sympathetic*, and occasioned by a painful contraction of the duodenum.

165. But the practitioner is not suffered to remain long under this fallacy; for, when the icterus has scarcely been discussed, or when it is drawing to a conclusion, in consequence of any slight cause, the pain arrives at such a height, and is attended with such a sense of rending and tension about the liver, stomach, and scrobiculus cordis, incessant anxiety, and such excruciating pain and swelling of the parts affected, that they cannot endure the slightest touch of the hand; with great straitening of the chest; with nausea and vomiting, or an inclination to vomit. Sometimes the pain stretches to the loins and back; sometimes to the umbilicus and ensiform cartilage*; for the duodenum reaches to the former, and the ligaments of the liver to the latter; sometimes it excites an acute fever, with a quick and hard pulse, and distresses the patients with such excruciating pain, that they can neither stretch their limbs, nor recline in any other way, but by bending forward upon their belly. These symp-

ptoms continue sometimes longer, sometimes shorter; and, as they frequently at first come on suddenly, so they sometimes depart on a sudden, and in a moment's time, without any gradual abatement. More frequently, however, they go off slowly and gradually, always leaving behind an icteric colour of the whole body, or, at least, of the face and chest, together with bound belly, and scanty and saffron-coloured urine. They go off in a moment's time, when the gall-bladder is emptied, as it were, by a single evacuation. This happens when it pours out the bile with great violence against the obstacle opposed to it, forcing them both into the duodenum; or when, while the obstacle still remains, it forces it back into the hepatic duct and its branches, transfusing it into the passages of the blood. This it effects either by its own power, or assisted by the contraction of the abdominal muscles and diaphragm. If this take place, not at one effort, but after repeated convulsions, the complaint likewise departs slowly and gradually. The fæces are generally hard and ash-coloured, or they have frequently appeared so for two or three days immediately preceding the paroxysm; which is a manifest proof of the bile having begun not to pass into the intestines. Sometimes, however, the fæces, at the commencement of the disease, and when the paroxysm is slight, as soon as the latter disappears, are passed yellow and bilious; which,

moreover, indicates that the bile, having at length overcome the obstructing cause, has passed into the intestines. These impediments are overcome either in consequence of the dilatation of the passages, or of the obstructing cause being forced onwards, whether it be coagulated bile, or a calculus; and it is afterwards detected in the fæces, when dissolved in water, and passed through a sieve.

* Hoffman (*Medic. System. Ration.*) observes, that when these calculi are present, *there is a sense of weight at the ensiform cartilage.*

166. Each accession continues one or two, or at most three days, which is the longest interval. For in this time the pain, oppression, and anxiety of the epigastrium and hypochondre, intirely cease, and the patient seems to have recovered his former health, in proportion as the skin and urine become manifestly more clear. Such intervals, however, and the hope they afford, are succeeded sometimes every week, sometimes every month, sooner or later, as it may happen, by the symptoms already mentioned, just in the same order; and after frequent and excruciating pains, the icteric colour of the skin becomes constant; sometimes, however, having aggravations, but of a milder kind, probably because the passages, being gradually rendered more open, are more favourable to the absorption of bile. The yellow colour of the bile is then gradually diffused over the whole body; the mouth becomes bitter, and nausea takes place; the appetite is not only lost, but a loathing of food supervenes; an intolerable

itching affects the skin; the yellow colour becoming darker, approaches to black; the body becomes emaciated; the feet swell; and by degrees *ascites abdominalis* follows.

167. Such is the more common progress of the complaint, which, if timely assistance be not given, is followed by a slow but certain death. Sometimes, however, it happens, that the gall-bladder, which frequently is found to be turgid, and distended, and protuberates below the margin of the liver, during some violent effort, bursts, and, pouring the bile into the abdominal cavity, suddenly creates a fatal tympanites. Sometimes, likewise, the pain is so acute, and the fever so violent, that the liver becomes affected with inflammation, which either terminates in gangrene, or a speedy death, or in suppuration and abscess, or *tabes* *.

* The author has given a very complete history of the icteric colic, and method of cure to be employed in it, in the work entitled, *Trattato delle acque di S. Christoforo*, &c. from p. 82. to p. 118.

168. From all this we infer, that the seat of the icteric colic is to be considered as being the gall-bladder, and annexed bile-ducts, and that its proximate cause can be nothing else than *violent irritation*, or *distension*, of the gall-bladder, whereof the one is occasioned either by density of the cystic bile, conjoined with acrimony, or by calculi in the gall-bladder, or even by lumbrici entering through the choledochus into the gall-bladder, such as Beuth has observed *; while the

other proceeds from the bile itself being prevented from passing out of its bladder, in consequence of some impediment either partially or intirely obstructing its passage, and preventing it from discharging itself through the common duct into the duodenum. In which respect it seems to differ from simple icterus, unaccompanied with pain; for in it the *hepatic bile* is principally faulty, as it passes freely neither to the gall-bladder, nor to the intestines; while in the other the *cystic bile* in particular is either morbidly dense and acrid, or abounds with calculi; or being prevented from passing the choledochus, it flows back into the gall-bladder, and, being collected there, occasions the disease †. In how many ways this may happen, and in what manner so distressing a complaint may be excited, I have already pointed out; and, indeed, it will readily be understood by any one who rightly considers the subject.

* L. c.

† See par. 143.

THE PROGNOSIS.

169. THE *yellow icterus* is less dangerous than the *black*. The *critical* species is safest of all, especially that which supervenes in fevers upon the seventh, ninth, eleventh, or fourteenth day, if the symptoms abate, as Baglivi remarks*; and if the right hypochondre be not hard †, or become so ‡, as Hippocrates has observed. The *epidemic* complaint, and that which takes place in new-born infants, is easily discussed. This is not

the case, if it arise from inflammation, scirrhus, or calculi of the liver. It is more easily cured in young, robust people, than in those advanced in life, of a weakly and hectic habit. It is frequently resolved by a copious discharge of thick, turbid urine; by sweat; by diarrhœa; and by the hemorrhoidal discharge. Moreover, the *symptomatic* complaint generally portends death; but we must except that species which is occasioned by intermitting fever; for, when the fever is removed by means of the bark, it also disappears. Nor is there much reason to apprehend danger from that which is occasioned by hysteria or hypochondriasis, or merely by pregnancy; for, upon the spasms being allayed, or after delivery, it quickly ceases. That which succeeds to *induration of the spleen*, and is *black*, is not free from danger. Moreover, it is generally fatal, if singultus, coma, or the vomiting of black bile, or blood, supervene. Likewise that which is of *long standing*, on account of the danger of emaciation, hectic fever, or dropsy being induced, is not void of danger. It is likewise not unfrequently succeeded by severe pains in the abdomen, and by a copious discharge of blood by the mouth and by stool, causing fainting and death. It is probable, that then a cancerous acrid ichor has eroded the vessels ||. For when the bile remains long in the blood, it induces a putrid and alkalescent dissolution. Valsalva observed an icterus occasioned by great

agitation of mind, accompanied with delirium, deep sleep, fever, and convulsions, prove fatal upon the fourth day §. The same author mentions that another person who had been attacked with jaundice the day after having been exposed to sudden and violent terror, being shortly after seized with delirium and convulsions, died within twenty-four hours ¶. The icteric colic, although long continued and obstinate, if it be properly treated, and if we have not to contend with any taint of the viscera, or if the patient be not advanced in life, not unfrequently yields to remedies. Hippocrates observes **: “When a fever supervenes in patients whose liver is affected with great pain, it removes the pain.” This is frequently true in the *icteric colic*; for the fever generally depends upon the evacuation of the gall-bladder, and upon the return of the bile into the blood. I do not deny, however, that sometimes apoplexy has been suddenly occasioned by the yellow jaundice, or by calculi of the gall-bladder. The hæmorrhages, which frequently supervene upon icterus, are allayed, as Huxham observes ††, by a decoction of hemp-seed in milk, by an emulsion of the seeds of white poppy and sweet almonds, after a slight bleeding, if a degree of fever require it, and the pulse bear it, and after the belly having been previously gently purged.

* *De crisi, et diebus criticis, &c.*

† Aphor. 64. sect. vi.

‡ Aphor. 42. sect. ead.

|| Van Swieten, § 946. § Morgagn.

epist. 37. n. 2.

¶ *Id. ibid.*

** Aphor. 52. sect. vii.

†† *De acce, et morbis epidem.* T. i. p. 412.

THE CURE.

170. IN plethoric persons, or such as labour under the suppression of any evacuation ; in *hepatitis*, or when it is apprehended ; and in pregnancy ; the cure ought to be begun with bleeding. When the bile is too abundant, thin, or acrid, it ought to be corrected and evacuated by acidulous diluents, and cooling cathartics ; by whey ; by the juice of lemons, sorrel, endive, and succory ; by cream of tartar ; and by tamarinds diluted with a large quantity of water. If viscosity, sluggishness, and density of the bile, be in fault, if the liver be obstructed, all the aperients already mentioned in Chap. XII. are most suitable, and especially the neutral salts, and likewise Venice soap, inspissated bullock's gall, and laxatives ; as rhubarb, and soluble, or vitriolated tartar, or Epsom salt. Sea-water, and St Christopher's water, or water any how impregnated with salt, are deservedly classed among the best remedies. Children and infants, especially if the disease proceed from the meconium, derive advantage from the syrup of succory, with rhubarb, and from a decoction of the root of grass. Spasms, if the disease proceed from them, are best alleviated by means of oily things ; by emollients ; by opium ; and by antihysterical remedies. The icterus which is occasioned by poisons, poisonous bites, fevers*, and other diseases, requires the same method of cure as the primary diseases;

* Scardona was very successful in curing an icterus, which supervened upon long continued and irregular tertian and quartan fevers, by employing the following electuary : *Rec. chin. chin. f. p. unc. j. sal. absynth. sal. ammon. arcan. duplic. extract. rhabarb. ana drach. ij. M. et c. s. q. syrup. de cicbor. cum rheo f. electuar. cap mane ad drach. ij. Superbibend. decoct. theiform. jummit. absynthii, fol. verben. chamædr. agri-mon.* It is likewise calculated for removing obstinate tertians and quartans. Lib. iii. cap. 5. § 31.

171. In the icteric colic, the first and chief part of the cure is, to endeavour, when the pain is most urgent, to allay the *spasm*, to free the biliary passages, and to make whatever adheres in them pass through the *ductus choledochus* to the intestines. In the second place, after the pain has ceased, we must endeavour to guard against its return ; which is to be effected by those remedies which either dissolve *, or expel, or prevent concretions and calculi. But each of these parts of cure must be accurately distinguished ; nor must the different stages be confounded. Nearly the same method, in short, ought to be observed in this disease, as in the treatment of urinary calculi †.

* Durand (*Mem. de l'acad. roy. de medec.* T. i. p. 288.) mentions, that two cures of biliary calculi were performed by means of a mixture of vitriolic ether and spirits of turpentine. But Gouner, in an express dissertation upon *biliary calculi*, (*See Thesaur. dissert. med. rarior.* vol. ii. ann. 1784, p. 191.), mentions, that after having instituted experiments for the purpose, he discovered that there is nothing possessed of the property of dissolving these calculi, not even the mixture already mentioned. He grants, however, that some effect is produced by the *terra foliata tartari*, by *alcohol*, and by the same conjoined with the naphtha of nitre, by the sweet spirit of nitre, and by the antispasmodic spirit of Protes. But he could not confirm the praises

which Murray has bestowed upon alcohol, saturated with the ethereal oil of turpentine, and formerly recommended by Percival. Instances of calculi of the gall-bladder having been extracted by means of an incision, are to be found in the Medical Commentaries of Leipzig, vol. iv. pag. 478. See Schulze's dissertation. *Ad dentur medicamenta, quæ calculum in vesica comminuant?* *Ibid.* vol. vi. par. 2. p. 232.

† See the Edinburgh Physic. Essays, vol. i. art. 33. and Morgagni, epist. 37.

172. When, therefore, the pain has come on, we must have recourse to the repeated employment of oily, emollient, diluent, demulcent, and anodyne remedies; and, when it is very violent, likewise to such as contain opium. Nor must we omit fomentations, cataplasms, the vapour-bath, anointing the patient, and clysters which prove emollient and antispasmodic. But, if plethora be present, or if fever supervene, bleeding will likewise be proper, not only to prevent inflammation, but also that the narrowness of the passages may not be increased by the turgescence of the vessels. Moreover, as all those things which prove emollient and sedative are recommended, so such as prove irritating are considered as very suspicious, of which kind are emetics and purgatives, although obstacles are said to have sometimes been removed by their means. For unless the passages have been sufficiently relaxed, which cannot be certainly ascertained, according to Hoffman, Roverhorst, Scheffel, Morgagni*, and others, they are generally hurtful, or at any rate of ambiguous efficacy.

* Epist. 37. n. 44. *et seq.*

173. Biliary concretions are powerfully dissolved by tepid watery drink ; by spirit of wine mixed with spirit of turpentine ; by the juice of grafs and dandelion ; by honey ; by soluble tartar ; by Venice soap ; by the root of the *parcira brava* ; by the tincture of the salt of tartar ; by the saline mineral waters ; and, lastly, by gentle friction applied to the region of the liver and gall-bladder. Gentle cathartics interposed, and especially rhubarb, the *tinctura sacra* of Lemery, and cream of tartar, dispose the calculi for excretion and passing into the intestines. But of all things most advantage is to be derived from the long continued employment of aperient and emollient vegetables, by which alone I have known many successful cures performed *. By these means alone I have observed the return of the disease prevented ; with which view all those things which prove strengthening, and remove the predisposing causes, ought to be employed for a long time. Vitriolic ether, mixed with equal parts of the oil of turpentine, to prevent its flying off, is celebrated as an efficacious solvent of biliary calculi. A small spoonful of this mixture in coffee is given morning and evening †. The efficacy of millipedes, likewise, in the cure of icterus, is considerable, as Willis and Ettmuller affirm. The former of these employs the following formula : *Rec. milliped. viv. n. 50. vel. 60. croci orientalis semidrachmam, nucis moschatae drachman unam. His una contusis affund.*

aqu. chelidon. unc. iv. F. expressio, et bibatur. But Lange† advises paying attention to the dose; for he assures us, that in young patients an hæmoptysis is induced by the alkaline salt with which these insects abound‡.

* Van Swieten, (§ 950.), by employing the juice of grass and whey in the spring-time, Spa water during the summer, and Venice soap in the winter, for the space of two years, succeeded completely in removing an icterus, under which a woman had laboured for twelve years.

† Morveau's *Elements of Chemistry*, vol. iii. and the *Nuovo magazzino Toscano*, vol. viii. p. 30. See the observations adduced in the note upon par. 171. taken from the author's papers.

‡ *Miscel. veritat.* fascic. i. p. 56.

|| To the other remedies, I may add one proposed by Greding. A mass is prepared by eight parts of the extract of belladonna, and five parts of the powder of its leaves; of which pills of a grain and a half each are prepared. One is given at a time in an obstinate case of icterus. The effects are, remarkable heat, violent pulsation of all the arteries, giddiness, copious sweat, green stools, and a discharge of urine. A cure is said to have been obtained by means of this remedy within ten days. *Com. med. Lipsf.* xix. p. 121.

CHAPTER XIV.

CONCERNING INFLAMMATION OF THE LIVER, SPLEEN, PANCREAS, OMENTUM, AND ME- SENTERY.

HEPATITIS.

174. INFLAMMATION of the liver is named *Hepatitis*; a disease not so frequent among us, as in the East and West Indies, where Vogel*, on the authority of Home and Lind, mentions its prevailing epidemically. But Ferrein† contends that it is of very frequent occurrence, and that the

smaller lobe is more frequently affected than the larger. The *venous* species, namely, that which is seated in the branches of the vena portarum, distributed over the liver, is of less frequent occurrence than the *arterious*, and, if Ludwig be credited, especially that which attacks the surface of the liver, and annexed membranes.

* *Prælect. de morb.* § 218. † *Histoire de l'acad. roy. des scienc. an.* 1766, 67, 68, p. 121.

175. The usual remote causes of the complaint I have already pointed out elsewhere. The causes which are in a manner peculiar to it are the choleric and melancholic temperament; hypochondriasis; biliary calculi; the icteric colic; thick or acrid bile; violent anger; suppression of the hemorrhoidal discharge; ardent, bilious, continued, or intermitting fevers; metastases; a severe blow given to the liver; &c. Likewise, the symptoms of other inflammations ought to be transferred to this place; namely, continued fever, thirst, heat, pulsation of the arteries, and the like. But the symptom which is considered as being in a manner pathognomonic*, is a pain which is excited or increased upon pressing any part of the liver. It must therefore be examined by the hand, while the patient lies upon his back, with his knees retracted in such a manner, that the abdominal muscles may be relaxed, and yield to the hand.

* Ferrein, l. c.

176. The pain is situated chiefly in the right

hypochondre and epigastrium, which are swelled, but without any change of the external colour, being sometimes violent and constant, sometimes tense and pungent, sometimes also obtuse and deep seated, and is often propagated on the right side to the chest, neck, and shoulder of the same side. Sometimes it occasions a numbness likewise in the right hand, and renders lying upon either side, but especially upon the left, uneasy. On account of the vicinity and connection of the diaphragm, the respiration is affected; the inspiration particularly is more difficult; a dry, frequent, and short cough, aggravating the pain, comes on; whenever food is taken, a sense of great fulness is excited; anxiety of the præcordia; a weak pulse, and frequent fainting, take place; sometimes the stomach and duodenum, being drawn into consent, bilious vomiting, diarrhoea, and a hiccup, which proves nearly suffocating to the patient, are superadded.

177. If the convex part of the liver alone be affected, it is probable that the diaphragm and respiration suffer greater injury, and that the icteric colour is then absent. If, on the other hand, the affection be confined to the lower surface, we conclude that the stomach and duodenum are chiefly affected, that icterus with bound belly takes place, and that the pulse is weaker, and the fainting of more frequent occurrence*. For icterus arises from the compression, or spasmodic constriction, of the ductus choledochus; but the

weakness of the pulse, and the fainting, seem to be referable not only to spasms, but likewise to the return of the blood through the *vena portarum* to the *vena cava* and heart being interrupted. Ferrein, besides the pathognomonic symptom already mentioned, (175.), and the fever, contends that an effect of this disease is likewise a pain which resembles cardialgia †.

* See a case of icterus, accompanied with suppuration of the liver, described in the second volume of the *Edin. phys. essays*.

† L. c.

178. Not unfrequently *hepatitis* resembles inflammation of the stomach, or *pleurisy*. Sometimes, also, *gastritis*, or *pleurisy*, or *peripneumony* is conjoined with *hepatitis*. Sometimes peripneumony, or other diseases of the lungs, put on the appearance of hepatitis. Which is apt to mislead not only novices, but likewise practitioners of long experience. For Valsalva, (as Morgagni relates *), and Sarcona †, mistook inflammation of the lungs for hepatitis. As inflammation of the right side of the lungs may so increase its size, especially when it affects the lower part, as to force the diaphragm and liver downwards. In that case, the pleuritic pain will be situate lower down, and will seem to occupy the usual seat of the liver. An observation of Sarcona, however, shews that both diseases were rather conjoined; namely, one terminating in *suppuration*, and the other in *resolution*, as the *increased size of the liver* ‡ seemed to indicate.

* *Epist. anat. med.* xx. n. 30. 31. † Part i. p. 208.

‡ Among the author's papers some observations respecting increased size of the liver were found, which seem worthy of being transcribed here, as from them we find what the morbid nature of the complaint is, and what its plan of cure ought to be, whether the disease be of the acute or chronic kind.

"Dr Crawford observed an *enlarged liver*, unaccompanied with any morbid condition, which he carefully described, an. 1771. The symptoms delivered by him there are as follow: The abdomen all of a sudden becomes much swelled and hardened, without any undulation being perceived on striking it. The respiration is very difficult, which is the principal symptom. It is preceded by total loss of strength, by a sense of constriction in the chest, and by vertigo upon any motion of the body. An œdematous swelling of the legs and feet succeeds; the back is pained; there is present unquenchable thirst and loathing of food. The pulse is weak and small, but after bleeding becomes greater, fuller, and more distinct. The face is red and flushed. As the swelling of the belly increases, the dyspnœa, likewise, is aggravated. These two symptoms, a few days after the first invasion of the disease, become exceedingly troublesome. Shortly after, the patient complains of an oppression at the region of the heart, and a constriction under the ensiform cartilage, which become intolerable, and in a short time occasion suffocation. Vertigo sometimes comes on, so that the patient cannot stand, and is obliged to go to bed, to avoid fainting. Some at this time feel a palpitation of the heart. Dissection discovers immense bulk of the liver occupying both hypochondres, and descending to the epigastrium. The upper part forces up the diaphragm, and thus compresses the lungs. The disease is acute, and is cured by bleeding and repeated purging."

"J. F. de Villiers, in his notes upon the *London Practice of Medicine*, p. 223, mentions, that sometimes the chronic complaint arises from the same morbid state. In that case, it comes on in consequence of the gradual congestion of blood both in the *liver* and *spleen*. Women, especially after their menses have left them, are liable to it. These two viscera are gradually enlarged, or one or other of them. The patient is shortly seized with asthmatic attacks, with weight, pain, and heat at the region of the stomach, especially after food, at which time the vapours rise towards the head. Generally costiveness accompanies the complaint,

which aggravates its symptoms. It is only when such viscera are increased in bulk, so as to fall into the hypogastric region, that the physician is consulted; because the patients can then no longer respire, nor bear the weight of the abdomen. While this complaint is forming, which frequently happens during the space of ten years, the system sometimes endeavours to free itself by an epistaxis, sometimes by an hemorrhoidal discharge, but always does it imperfectly. The body and pulse are languid; but bleeding and two or three purges rouse the strength and pulse. It then becomes hard and full, and there is therefore need of a second bleeding, and other evacuations. A blister applied to the part affected is not without utility. Willis, also, may be consulted concerning this disease."

179. Hence all the symptoms must be weighed with the utmost care, that no room may be left for mistake; or, at least, it will be most prudent to refrain from too precipitate a judgment. Hepatitis, like other inflammations, terminates either in health, or in death, or in other chronic diseases. That hiccup which arises from inflammation of the liver, is pronounced by Hippocrates to be a bad symptom. The abscess sometimes points outwards, and growing to the pericardium, requires the aid of surgery *. It is spontaneously resolved by a copious discharge of turbid urine; by sweat; by diarrhoea; by a discharge of blood from the nose, or from the hemorrhoidal veins; by vomiting; and sometimes also by expectoration. Death is occasioned, if pus be poured into the cavity of the abdomen, or into that of the chest. In the body of a man, who, after the removal of an icterus, complained of pain at the liver, and loss of strength, Portal found, besides a purulent colluvies in the abdomen, and corrup-

tion of the omentum, the liver enlarged in its lower part, and containing a great abscess, abounding with foul pus; and the part of the colon next it was also in a state of putrefaction †. Van Swieten mentions, that frequently hepatitis is conjoined with intermitting fevers, and passes into the worst kind of dysentery, especially if the fever have been prematurely cured by the bark ‡. But, with deference to so great a name, that evil may be frequently prevented by means of the peruvian bark, as I have elsewhere shewn, and as has been observed by others as well as myself.

* See a treatise concerning abscesses of the liver, in vol. ii. of the *Mem. de l'acad. roy. de chirurg.* &c. † *Hist. anat. med.* vol. i. p. 163.

‡ § 946.

SPLENITIS.

180. INFLAMMATION of the *spleen*, also, is properly denominated *splenitis*. The *genuine* and *primary splenitis* more rarely occurs, while the *secondary* species, and that which supervenes upon obstruction of the spleen, is not unfrequent. In that case, the left hypochondre is affected with pain, sometimes at the left part of the colon, or at the clavicle, or even in the scapula, and shoulder of the same side. Likewise an obscure pain, or sometimes even a lancinating and acute one, passes to the false ribs. Sometimes it stretches to the epigastrium. The swelling resembles the figure of the spleen, does not admit of being touched, and sometimes prevents the patient

from lying on either side. Symptoms of *pleurisy* are frequently present *, while those of *nephritis* are absent. If an abscess or ulcer take place, it may be discovered by nearly the same symptoms as an abscess of the liver. Sometimes a bony covering of the spleen, occasioned by the duration of the complaint, is found on dissection †.

* See Part I. of this Volume, Chap. IV. † Morand. *Com. acad. Par.* vol. vii. p. 188.

181. The symptoms of inflammation of the *pancreas* and *omentum* are very obscure; but they are derived from the consideration of the situation of these viscera, and of the functions which are injured *. Inflammation of the mesentery is frequently conjoined with *enteritis*, and occasions similar symptoms. Sometimes it is lingering, and accompanies the *tabes mesenterica*, as it is called †. The pain occupies the whole umbilical and lumbar regions.

* Columbus observed an abscess in the *omentum* and *peritonæum* of a woman labouring under ascites, without any injury to the liver and spleen. *De re anat.* lib. 15. p. 491.

† Concerning the *tabes mesenterica*, and similar complaints, see Chap. III. Part I. Vol. IV.

THE CURE.

182. THE cure of hepatitis is performed by bleeding, emollients, and aperients, as also by gently purging the belly *. If the practitioner foresee that a critical diarrhœa is about to happen, he ought to promote it gently by means of emollient injections; by fomentations applied to

the loins and abdomen; by drink, consisting of purified whey, with the root of elder, or syrup of citron; by decoctions of the subacid and resolving plants, as, the pulp of tamarinds, or the fruits of cassia, honey, nitre, crystals of tartar, and the like. Acrid purges, which would be apt to increase the inflammation, are contra-indicated. When itching of the nose, redness, and swelling of the face, and the *pulsus dicrotus*, announce the approach of an hemorrhage, it is very advantageous by means of fomentations and vapours to relax the fore-head, internal nares, and neighbouring parts. Moreover, the elimination of the inflammatory matter proceeding from the surface of the body, like sweat, is excellently promoted by means of the gentle heat of the bed, teillowers, or a strong infusion of elder, drunk off copiously, or by whey taken warm. But, if a crisis begin to take place by means of a discharge of urine, or by the expectoration, the mildest diuretics and expectorants ought to be employed, while we never lose sight of the caution of Hippocrates, *Quæ duceri oportet, ducenda sunt quo maxime vergat natura per loca conferentia*; and in the way which is most agreeable to nature. Hepatitis may likewise be resolved by the hemorrhoidal or menstrual discharge; which evacuations, provided they be not excessive, it will be of the greatest service to promote. But more severe inflammations of the liver must be treated by the

stricter antiphlogistic regimen, elsewhere described *, with the probable view of preventing an abscess, which is much to be dreaded. When only the ramifications of the vena portarum are inflamed, bleeding will be productive of very little effect. In which case, leeches ought to be applied to the external hemorrhoidal veins, which communicate by means of anastomoses with the internal, and consequently with the vena portarum. A decoction of arnica, with its flowers, after bleeding in the part next to that affected has been premised, is preferable to other remedies,—from whatever cause the stagnation of the blood may proceed,—for removing the inflammation †. Baglivi, for preventing gangrene in inflammations of the internal viscera, sets great value upon decoctions of the root and leaves of scabiosa ‖. If the concave part of the liver be affected, epispastics applied to the right hypochondre are scarcely of any service. However, when other remedies fail, these may also be tried. Frequently, when the fever is disscussed, whatever swelling remains is resolved by vegetable balsamic remedies, as turpentine, balsam of *copaiva*, &c. In short, the practitioner ought not to desist from his endeavours, until both the liver and the whole body have been sufficiently cleansed.

* Ferrein, l. c. † See the *Commentary upon Inflammation*, Vol. I. and Par. i. Vol. IV. Chap. iv. and elsewhere. Likewise, *Disputat. acad. Ginesii Rossii, &c. preside J. B. Burserio, de praeiurum partium inflammationibus, Ticini habita*, 1771.

‡ Lange, (*Mischel. verit. fascic. i. p. 69.*), who there cautions

cus against admitting in place of the *arnica* the *asfer luteus*. The *arnica foliis carnosis, crassis, et disco floris lanuginoso*, is distinguished from all other kindred plants.

|| *De febrib. malign. et mesentricis, &c.*

183. There is no essential difference between the cure of *hepatitis* and that of *splenitis*, except the topical remedies applied to the left hypochondre, and the first bleedings, which, in the opinion of some, ought to be performed in the left arm. By the way, I would wish the student to observe, that no certain diagnosis between inflammation of the *pancreas*, *omentum*, and *mesentery*, can be formed at the beginning; for the more severe symptoms are absent, the fever is slight, the pain obscure, and there is scarcely any internal heat or thirst, in consequence of which patients labouring under them are still enabled to go through their usual occupations. But when the inflammation of these parts is very severe, it is subdued by nearly the same antiphlogistic remedies as those formerly enumerated. In one word, these affections require the same remedies which are employed in the cure of *pleurisy*. If there be any difference, it will be pointed out by the observations already delivered concerning *icterus*, *gastritis*, and *enteritis* *.

* See the preceding Chapters, VI. VII. VIII. and XIII.

CHAPTER XV.

CONCERNING NEPHRALGIA, OR NEPHRITIC PAIN, AND URINARY CALCULI.

184. EVERY pain affecting both kidneys, or one or other of them, which is of more frequent occurrence, is named *nephralgia*, or *pain of the kidneys*, or *nephritic pain*, as also *nephritic colic*. Some pains of the kidneys are comprehended under the single name of *nephritis*, which is divided into *true* and *false*. The *true* species is that which is occasioned by *inflammation of the kidneys*; the *spurious* is that which is occasioned by other causes. But, as every pain of the kidneys, from whatever cause it be derived, differs merely in the severity of its symptoms, it is better to name them, of whatever kind they be, *nephritic*, and, for the sake of perspicuity, to divide them into *inflammatory*, and *not inflammatory*; and to subdivide each of these again into *sanguineous*; *rheumatic*; *arthritic*; *calculous*; *convulsive*; *ulcerous*; *purulent*, &c. according as blood, acrid serum, gout, rheumatism, calculus, and ulceration, or abscess, have occasioned them.

185. The causes in common to other pains, have likewise a place here; but such as are considered as being more peculiar to this complaint are, contusions; wounds; abscesses; ulcers*; swellings; congestions of blood; too great an appulse of acrid, arthritic, rheumatic, scorbutic,

and venereal serum; stagnation of the urine, on account of the passages being obstructed; violent exertions; long-continued riding on horse-back, or in a carriage; long lying upon the back; spasmodic affections of the nerves; calculi sticking in the pelvis of the kidneys †, or ureters, or obstructing the passage; an hereditary taint; immoderate venery; acrid diuretics, and especially those prepared with cantharides, as well as the immoderate employment of these externally.

* “A girl of twelve years of age for three months endured a pain in the region of the kidneys, which stretched all the way to the thighs, attended with *ardor urinæ*, and acrimony of it, a copious purulent matter in the urine, thirst, hectic heat, and consumption, and with the *facies Hippocratica*, so that she could neither raise herself, nor walk. It was supposed that the ulcer of the kidneys was recent, on account of the pain attending it. The following remedy, therefore, was prescribed: *Rec. Rhubarb. semidrachm. spermat. ceti, baccar. lauri ana scrup. j. opobalsam. gutt. x. terebinthinæ chiz q. s. ut f. pilulæ mediocres. Sume iv. mane et vesperti, superbibendo haustum postetici radicib. althææ alterati. Sumat pro potu decoct. hordei syrupo althææ q. s. edulcatum: et duabus noctibus continuis pilul. Matthæi dimid. scrup.* The pain was alleviated by means of one of the *pilulæ Matthæi*; and the thirst was allayed by means of barley-water. The hectic heat and the acrimony of the urine were corrected by it, and by the syrup of marshmallows were determined to the urinary passages. The rhubarb proved detergent and cleansing, and the resolving quality of the spermacetæ had the same tendency. Turpentine and the opo-balsamum served to strengthen the relaxed parts. The addition of laurel-berries removed the pains of the belly and nausea. Within a month, these remedies enabled the patient to rise out of bed, and walk about; and within three months she recovered intirely. But it was necessary to persist in them constantly, nor were any other remedies employed.” Hamilton, *Prax. med. reg.* p. 18.—21.

† Among the author's papers, we found the following case, which has been extracted from the *Edinburgh Physical Essays*.

"A man of fifty-three years of age, of a stout, muscular habit, and with very turgid veins, chiefly those in the arms, four years ago began to be affected with violent pains, occupying the right side, towards the region of the right kidney, which were never entirely absent. Sometimes, however, they remitted at intervals, and in other respects he was in good health. He employed a variety of remedies by the advice of Pitcairn, and other physicians, but without effect, except warm water to the extent of twelve pounds, which afforded some relief. He was frequently for whole months so harassed with distressing pains, that he was obliged to lie upon a single sheet spread on the floor, and derived some relief from strongly pressing the side affected to the floor. Whatever urine he voided, during the violence of the pains, shortly afterwards put on the appearance of the white of an egg. He was likewise liable to frequent diarrhoeas, which were unaccompanied with pain, and could then contain himself for the space of a day. He could also then allow the urine to accumulate in the bladder until it was filled; and, when he made water, he sometimes passed, at one time, not less than six pounds. He employed various articles of diet, and different kinds of drink; such as eggs, butter, roast meat, spirituous and aromatic drinks, white wine, &c. all of which excited the pains. Small beer alone afforded him any relief; of which he, therefore, frequently drank. About the beginning of the year 1731, he was affected with a severe expectoration, which succeeded to a wasting, and, on the 29th of March he expired, although he had never before been affected with any pulmonary complaint. Upon dissection a stone was found in the pelvis of the right kidney, half an ounce in weight, of a triangular figure, and having its surface rough with granulations. In the substance of the kidney was another stone of smaller size, weighing only 16 grains, and of an irregular square figure. Besides these two concretions, there were various others of the same kind, but particularly in the excretories of the glands. Many of these were equal in bulk to a large-sized grain of sand." See Douglas, *ibid.*

Concerning the formation and commencement of *calculus*, whoever is desirous of greater information, may consult Boerhaave, § 1415.; Haller, in his *Opuscul. Patholog.*; Geoffroy, *Mat. med.* vol. 1. p. 51.; Scardona, L. iii. c. xi. § 11.; and the *Comment. med. Lips.* vol. vi. P. iv. p. 628. and several others.

DIAGNOSIS.

186. THE pain is felt in the loins, affecting sometimes the right, sometimes the left side, and sometimes both, according as one or other, or both kidneys, are affected. Sometimes it is obscure, and occasions a sense of weight; at other times it is acute and throbbing, and increases when the body moves so as to stretch the loins. Besides, the pain is propagated along the ureters to the bladder, and the testicles of the same side are frequently retracted. This, however, is generally referred to the spasm which takes place. Some, however, but chiefly Rutty, an English writer, affirm, that this takes place on account of the ureters passing under the *vasa deferentia*, and therefore pressing upon or irritating them, so that being contracted they draw up the testicle. Lastly, a numbness of the leg comes on, in consequence of compression of the crural nerves. For the psoas muscles and internal iliacs being spasmodically affected, strangulate the nerves themselves *. But the urine is sometimes scanty and red; sometimes pale and watery; sometimes thin and fiery; sometimes acrid, and emitting a lixivial smell; sometimes fetid, purulent, mucous, and abounding with sand. The belly is generally loose; but during the height of the pain it becomes bound, and flatulent. Very frequently, however, on account of the sympathy of the nerves, to these symptoms are added vomiting, or a desire to vomit.

* See *Tab. Eustach.* xix. and Van Swieten, *De nephrit.*

187. All of which symptoms, if inflammation occasion the pain, or if the pain have terminated in it, are then frequently aggravated, and an acute fever, accompanied with a hard pulse, is at the same time present. But as most frequently calculi occasion the nephritic pains, (for although calculi have been discovered every where in the body *, they are chiefly found in the kidneys and urinary bladder), it may be serviceable to treat of these at somewhat greater length. And in the first place, according to the diversity of the situation in which they are placed, and figure which they assume, they occasion some variation in the pain. For when they stick in the kidneys, and are smooth and round, they occasion rather an obtuse and heavy pain; on the other hand, if they be rough, angular, or pointed, one which is more acute and severe; and it is particularly aggravated, when they pass from the kidneys into the ureters; nay, it generally becomes extremely acute, when they pass the narrow diameter of the ureters next the bladder, and fall into it. When they find more room in the bladder, the pain ceases, or only a sense of weight, or some difficulty in passing the urine, or a frequent desire to make water, is felt.

* Columbus observed calculi in the kidneys, in the lungs, in the liver, in the vena portarum, in the bladder, in the hemorrhoidal veins, in the umbilicus, and in the gall-bladder (*De re anatomi.* lib. xv. p. 491.). Littri also observed a stone in the cavity of the abdomen (*Mém. de l'acad.*); and J. G. Kruger observed another

calculus formed in the palate. See *Comment. acad. scienc. Petropolitanae*, vol. 1. par. iv. p. 374.

188. It must be observed, however, that the pains occasionally, or sometimes on a sudden, cease, if the calculus attempting a passage into the ureters be again forced back into the pelvis by their spasmodic contraction, or pass from a narrow to a wider part (for the width of the ureters is frequently not uniform), or if it acquire a position better calculated for passing. With respect to the seat of the pain, and condition of the urine, when calculi occasion the complaint, it is obvious that the former follows the course of the ureters towards the bladder and testicles; and that the latter must be various, being generally at first thin and sparing, or sometimes altogether suppressed, while in the progress of the calculus, or when it has already passed into the bladder, it becomes copious, turbid, frequently depositing a sandy sediment. Not unfrequently also the urine is tinged with some blood; but that happens only when the calculus has wounded the vessels of the kidneys, or other parts, through which it passes.

189. It is to be remarked, however, that such sandy sediment does not always afford a proof of the presence of calculus. For sometimes it is altogether absent while a calculus is present, which has sometimes been found in the kidneys, without having been preceded by either pain or sand in the urine *. Lastly, that sand denotes calculus, or is referable to calculous concretions, which sub-

sides immediately after the urine is passed, is not exactly mixed with the urine, and when rubbed between the fingers, cannot readily be reduced to a powder †. The sand which wants those marks in general may be considered as being only a symptom of a scorbutic and hypochondriacal affection. Let these remarks concerning calculi of the kidneys suffice.

* In the bodies of such persons as, during their life, had never experienced either *dysuria*, or *ischuria*, pain of the loins or thighs, or similar nephritic affections, calculi and small stones, according to Bonn, have been found. *De off. med.* cap. i. p. 14. edit. Lips.

† See the note upon par. 269. Vol. IV. taken from Morgagni, where the author has delivered his remarks at greater length upon this subject.

190. We must now proceed to the symptoms by which *calculus vesicæ*, when it has acquired considerable size, is generally distinguished. If not all, the greater number of the symptoms which follow, take place. There is a weight in the perinæum; some impediment in making water, in consequence of which frequently the flow of urine is interrupted; it is more easily discharged when the body is supine, and the knees are drawn up towards the belly; there is tenesmus, or a frequent desire to make water and go to stool together, an uneasy pain and itching at the *glans penis*, pretty frequent rigidity of the latter, and the sensation of a body moving in the bladder, when a person lies down, or is suddenly shaken. When the stone has in-

creased, riding and quick motion cannot be endured, and the urine is then passed mixed with blood. But when the complaint has been of long standing, the urine deposits much mucous jelly, like albumen, at the bottom of the pot. These symptoms, however, either are not always present, or are not considered as being unequivocal indications of calculus, as they are in common to scirrhus of the neck of the bladder*, or other swellings. Baglivi very properly remarks: "Scirrhus of the bladder exactly resembles calculus of it, as I have twice observed on dissection†." To ascertain the presence of a calculus, it is necessary to introduce the catheter into the bladder, or the finger into the anus, that we may be enabled with certainty to determine the matter.

* "Almost all these symptoms were long experienced by the author, although no calculus was discovered on dissection, except a stony concretion inclosed in a cartilaginous capsule about the size of a walnut, which was fixed in the cellular membrane of the scrotum. A large abscess, indeed, was discovered both in the urinary bladder, and in the right kidney, which was larger than usual; and a great quantity of pus appeared in both. Probably the disease arose from a scirrhus formed within, which afterwards undergone suppuration; and this indeed appeared pretty probable from the callous hardness which appeared in the inside of the neck of the bladder, and from the small scirrhii with which the neighbouring parts appeared here and there to abound." [*The German Editor, from the published account of Kanina, who was present at the dissection.*]

† Lib. i. *Prax.* cap. xiii. *Quanti intersit præcepta*, &c. See also De Haen, P. iii. cap. iv. p. 176. *Rat. med.*

PROGNOSIS.

191. NEPHRITIS, whether it be the *true* or *false* species, is a complaint not to be slighted. For it either threatens inflammation, or is accompanied by it. Hence all the terminations of inflammation may be dreaded. Many bad consequences, also, are threatened, merely by the violence of the pain and spasm, to say nothing of the urine being retained, and flowing back into the blood. But, as hitherto no certain remedy has been found for the calculi, so there is no chance of recovery, unless in their expulsion, when that is practicable *, or in a surgical operation, which, however, is attended with great danger. Baglivi observes: “Those who are cut off in consequence of a calculus in the kidneys, die in convulsions, or delirious †.”

* Delahire mentions, that a person passed a calculus as large as an olive, in consequence of inclining himself forward on the ground, in order to write. *Mem. de l'acad. de Par.* tom. vii.

† *De ictero flavo.*

THE CURE.

192. THE cure of *nephritic pain* ought to be immediately attempted by bleeding, first from the superior, and next from the inferior extremities; by linseed, almond, or olive oil; by a gentle laxative of cassia; by emollients of all kinds, both internally and externally employed; namely, injections, fomentations, *semicupium*, and, if it be

necessary, likewise by opiates. Diuretics ought to be banished from the practice, unless they be very mild, and of an emollient or correcting kind; as well as acrid, balsamic things, and all kinds of lithontriptics, as they are called *. The drink ought to be the water of mallows, of marsh-mallows, of the flowers of mullen, of the leaves of pellitory, of liquorice-root, or the purest fountain-water, prepared with a subacid vegetable juice, or a little nitre, or oxymel; and these drinks are calculated for almost every nephritic pain, not excepting such as proceed from calculi.

* Hulme published the following method for dissolving urinary calculi. *Solvantur xv grana salis tartari in unciis quatuor aque pure, et tota mixtura uno hausto sumatur, cui statim alia quatuor uncie aque pure superbibantur, quibus xx guttæ spiritus levis vitrioli addantur.* Both remedies are repeated four times a-day, at proper intervals; and are thus continued for three or four weeks. If any burning heat be excited in the bladder, the remedy may be suspended for a few days, and in the mean time emulsions ought to be taken. If the belly be bound, the practitioner should have recourse to clysters, and a little of the pulp of cassia. For the drink, may be given water, and a little white wine. It is to be remarked, however, that in the bladder of the patient whom the author cured, or believed he had cured, and who died some time after, many calculi were found, which had not been dissolved, as Meinard Simon du Pui, in his dissertation *De homine dextro et sinistro*, affirms.

193. Upon the pain being discussed, and the inflammation resolved, the prophylactic means to be employed are the same as those calculated for removing the causes. Generally, strict attention to the diet; moderate exercise; the drinking of mineral waters; whey; asses and goats milk;

and abstinence from vinous liquors, are suitable in all cases. Venice soap *, the *aqua calcis* of crustaceous animals †, the *virga aurea*, *uva ursi*, the *radix cardui stellati*, *eryngo*, *ononis*, the leaves of the ground-ivy, of *betony*, of *acmella*, of *verbefina*, and other vegetable productions, possessed of a diuretic property; as onions, radishes, turnips, parsnips, leeks, parsley, petroselinum, beet, tragopogon, and the like, are adapted to calculous patients. The juice of the birch-tree exuding from the upper branches about three inches thick, opened in the spring-time, given every day in the morning, to the extent of some spoonfuls, to alleviate the disease, according to the testimony, first of Van Helmont and Boyle ‡, and next of Lange §, proves of wonderful service in calculous cases. It is an acidulous juice. It may be kept in a bottle, by receiving in the bottle when inverted the smoke of a thread covered with sulphur, and set on fire, immediately on its being extinguished, introducing the juice, and closing the mouth well, which is the method Cnoëssel proposes. It may be thus preserved for a long time. It is also proposed in gouty pains. The sand and small calculi are successfully expelled by means of the powder of juniper-berries, or by an infusion of them with goat's milk, mixed in equal quantities, and continued for some days §. A certain degree of efficacy is likewise possessed by the root of the *pareira brava*, which is to be employed when ulcers and abscesses have formed in the urinary passages ¶. De Haen, also, in ul-

operation of the kidneys, ureters, and bladder, with the suspicion of the presence of calculus, considered the *uva ursi* as serviceable **. Likewise, various kinds of injections †† are recommended. According to Lange, the remedy of Meibomius, consisting of equal parts of Venice turpentine, and extract of cascarilla, is highly anti-nephritic. It is given to the extent of six grains, with the *aqua nymphææ*, until the urine becomes clear, and the pain cease, which, he asserts, happens within a few days ‡‡. According to some, nitre, providing it be taken every fortnight, in proper quantity, is a preservative against calculi, as Scardona remarks |||. The same effect is likewise said to be produced by mucilaginous and unctuous substances, as milk, and decoctions of barley and rice. Boiled meat is better calculated for nephritic patients than roasted. The less austere wines ought to be employed; and Meade advises the drinking of the lightest and purest river-water §§. Lying on the back ought to be avoided; and the patient ought rather to recline on the side affected.

* Soap-boilers lee itself is considered as being a most excellent and harmless lithontriptic. See Home on *solvents*, Lond. 1783. See also *Journ. de med.* tom. ix. p. 264.

† See vol. iii. p. 10. and 52. and vol. iv. p. 611. *Comm. de rel. in scient. nat. et med. gest.* where more remedies, as proposed by Walpole and Whytt, are enumerated. The method of employing this water, prepared from oyster-shells, is pointed out in the same work, p. 613. and in vol. v. of the *Edinburgh inaugural dissertations*. Tqo

great a dose of it, however, as Huxham observes, induces *phthisis*, *scurvy*, and similar bad consequences, which De Haen also remarks, and which Walpole has shewn by an experiment of his own.

‡ Boerh. *Chem.* vol. ii. p. 95.

|| *Miscel. veritat.* fascic. i. p. 21.

§ Lange, l. c. p. 22. Hoffman mentions that the bark of the root of acacia, its decoction, the rob of juniper, and of hips, possess a certain specific virtue, when the disease is accompanied with weakened tone of the kidneys. For dissolving calculi both small and great, Marian, a surgeon of celebrity, proposes the following remedy, the efficacy of which was confirmed by his own experience of it. *Rec. Semin. apii silvestr. drachm. iv. Florum cardui stellat. unc. j. siccantur in furno, et deinde fiat pulvis. Dosis semidrachma vel scrup. ij. semel, vel bis in die.* He likewise employed an injection of the *carduus stellatus*.

¶ Geoffroy, vol. i. p. 189. and 100. The formula is to be found in p. 443. It is as follows: *Rec. Radic. Butue pulver. Ratic. liquirit. pulv. ana scrup. sem. balsam. copair. q. s. M. f. p. cap. mane et vespere.* See also Scardona *Cap. de renum, et vesicæ calculis*, § 15. If the ulcers of the kidneys and bladder be erysipelatous, as frequently happens, Hoffman assures us that all balsamic, resinous, and oily remedies, prove detrimental. Geoffroy, l. c. p. 438.

** *Rat. med.* P. iii. c. 4. P. iv. c. 7. Vid. *Barbeirat. medicament. form.* p. 163.

†† Vid. *Comm. de reb. in scient. nat. et med. gest.* vol. iv. p. 273. where mention is made of a publication of Butter, in which the method of curing calculus, by means of injections, is pointed out. See Dessault *dissertation sur les pierres, etc.* and *Ed. Med. Essays*.

‡‡ L. c. p. 30. |||| Lib. iii. cap. xi. § 10. §§ *Monita, et præcepta medica*, ch. x.

CHAPTER XVI.

CONCERNING HÆMATURIA.

194. THE blood is sometimes discharged from the kidneys, ureters, and bladder, along with the urine, rendering it bloody. It seldom comes off pure and

unmixed, unless it only proceeds from the urethra. It is named *Hæmaturia*. The causes are the same as those of other hemorrhages, but especially plethora; blows; calculi, or the difficult passage of them; violent motion; exercise, riding; hemorrhoids of the bladder; ulcers of the urinary passages; a scorbutic dyscrasy; the use of cantharides, or the suppression of an accustomed evacuation of blood which used to take place from other parts*.

* It may be proper to consult the history of a case of hæmaturia from callus of the bladder, related by Zwinger, T. 1. *Act. Helv.* p. 13. *Basil. edit.* an. 1757.

195. The red urine accompanying fever, or that occasioned by the eating of madder, or the fruit of the opuntia, ought not to be confounded with bloody urine. The former is thin and clear, nor does it tinge linen rags, or paper dipt into it; the latter is turbid, thick, and frequently deposits blood, or small clots of blood, in the bottom of the vessel, and symptoms of an affection of the part, from which it proceeds, are generally at the same time present.

THE DIAGNOSIS.

196. If the blood proceed from the kidneys, (which affection is then properly named *hæmaturia*), it ought to be copious and intimately mixed with the urine. Some contend that it is accompanied with pain, others that it is not. But neither of these is an invariable occurrence. If it

proceed from the ureters, it is passed sparingly, but accompanied with some pain about the ilia, or loins, or umbilical region towards the hypogastrium, and it is generally preceded by such causes as injure the ureters. When it flows from the bladder, it may in like manner be copious, generally collected into *grumi* and *thrombi*, sometimes blackish, sometimes florid and pure, sometimes mixed with the urine, but not uniformly. And it is frequently conjoined with pain or heat, and likewise with some strangury. But these and the other symptoms vary exceedingly.

HEMORRHAGE OF THE PENIS.

197. UNDER this head seems to come *hemorrhage of the penis*, or *flymatosis*, which is generally omitted by pathologists. Cælius Aurelianus, however, speaks of it in book 5. chap. 4. By it we understand a discharge of pure blood from the internal passage of the penis, or urethra, as also from the glans, or prepuce; which, while there is no desire to make water, and without any discharge of urine, or effort, frequently takes place without pain from an open and eroded blood-vessel. In this discharge the penis is sometimes flaccid, sometimes rigid. Likewise the quantity of blood is various; for sometimes it is confined to a few ounces, sometimes it amounts to a few pounds. Sometimes it ceases in an hour or two; at other times it continues longer. Nor are there wanting instances of this discharge frequently

recurring, or even observing regular periods, in the same manner as the menstrual or hemorrhoidal evacuation, or only appearing during the act of coition, or of unconscious emission. Its causes are the same as those mentioned elsewhere.

PROGNOSIS.

198. THE degree of danger is estimated by the quantity of blood effused; by the continuance, or recurrence of the discharge; by the symptoms, or diseases with which it is conjoined; and, lastly, by the consideration of the part affected. The discharge of blood, which takes place in the penis, is attended with less danger. When it proceeds from the bladder and ureters, it is more alarming; while the discharge from the kidneys is the most dangerous of all. But when the discharge is periodical, and not immoderate, it is generally harmless.

THE CURE.

199. IN the cure of *hæmaturia*, the principal indications are, to remove the cause; to correct the blood, if it be too acrid, or otherwise morbid; and, lastly, to restore the strength of the parts from which the blood flows. We must, therefore, in the first place, inquire whether the blood be too copious, or too acrid and thin. Its quantity is immediately diminished by taking

blood from the arm, by means of which the motion of the blood being attracted to the upper parts, it passes with less force to the part from which the discharge takes place, permitting the open vessels to contract and unite. It may likewise be drawn by applying leeches to the hemorrhoidal veins, if suppression of the hemorrhoidal or menstrual discharge have given rise to the complaint. But if, from the symptoms elsewhere frequently enumerated, it appear that the blood is either in a state of putrid colliquation, or morbidly acrid and attenuated (unless great fulness of the vessels be conjoined with these morbid states), omitting the bleeding, it will be better by means of antiseptics to obviate the putrefaction, or by demulcents and sweeteners to oppose the acrimony. Among these the chief rank is held by acids of all kinds, both vegetable and fossil *; the bark; simarouba; cooling antiscorbutic remedies; acidulated whey; emulsions of the cold seeds; all kinds of mucilaginous things; gum-tragacanth, and gum-arabic; and the like. But, above all, the drinking of the coldest water and milk *, especially ewe-milk as being thick, and prepared with ignited steel, or some juice, to oppose the peculiar and known acrimony. Milk is most suitable, if cantharides or acrid medicines have occasioned the complaint. But if violent bodily motion, a blow, contusion, or calculus have burst or lacerated the blood-vessels †, to those remedies, which diminish the quan-

tity and motion of the blood, must be added the greatest rest both of body and mind, and the patient ought to be placed in a very temperate situation, rather inclining to cold: and these cautions also, according to circumstances, from whatever origin the disease proceeds, ought to be attended to; and the patient's posture ought to be such that he may lie as little as possible on his back and loins. When the hæmaturia proceeds especially from a blow, or contusion, it is said to be cured most effectually by a decoction of the flowers and leaves of arnica, or madder with hydromel.

* See Vol. II. § 242. and 271. There the author mentions, that the sulphuric acid is preferable to the others in hæmaturia. See also the remedies proposed in par. 70. and 71. for the cure of bloody flux.

† Le Clerc (*Hist. nat. de l'homme malade*. tom. ii. p. 31.) mentions, that a man, after various tedious disorders with which he was distressed, was attacked with a hæmaturia. Poissonier, in consequence of the bad success of other remedies, conjectured, that the method of cure was to be changed, and therefore recommended to his patient to employ cow's milk, and that the cow should be fed with bran and water, and nettles. By employing the milk thus prepared, the patient recovered. Three years afterwards, however, he died, in consequence of a fungus growing to the bladder; which, Le Clerc observes, by no means is an objection to the medicinal property of this milk, as we know that upwards of twenty patients labouring under hæmoptoe have been restored by means of the same remedy.

We find a case of hemorrhage occasioned in consequence of some branch of the vena portæ being burst by calculi, inserted in the *Journal de Medecine* for July 1782.

200. But if *relaxation* and *atony* occasion the complaint, or follow the hæmaturia, likewise a-

stringents ought to be employed; as the juice of plantain, and of the *urtica*, not of the stinging kind; decoctions of the greater comfrey, milfoil, adding troches of *carabe*, or those of Gordon, which are particularly recommended by Haller and Duretus; catechu earth; Armenian bole; *fungus melitensis*; and other remedies, of which mention was made when I spoke concerning hemorrhage of other parts. Nor are vulnerary remedies, and those possessing a gently balsamic property, improper, if the blood be discharged from an ulcer or abscess. Likewise cold and gently astringent applications ought to be employed externally.

201. In hemorrhage of the penis, if it be truly such, we ought to employ compression, the affusion of cold water, and gentle astringent injections, as the *aqua vulneraria*, or the *aqua Rabelii*, or that of plantain, with saccharum saturni, or crude alum*, or the decoction of bark, and the like; unless scantiness of the blood and a periodical discharge of it unattended with danger, render all treatment superfluous. In these affections, rest, and the strictest attention to the diet, ought to be enjoined, by way of prophylaxis. Motion, exercise, and venery, must be carefully avoided. Pottage of barley and rice, and the soup or flesh of river-crabs, are recommended; as also medicated waters in the summer-time.

* See in Vol. II. Par. 171. in the note, the formulæ of the *serum lacis aluminis*, and the *specific* of Helvetius, as well as the

remarks which the author makes in the following note, concerning the nature and power of acids. [*Germ. Editor.*]

CHAPTER XVII.

CONCERNING DIABETES.

202. FROM hæmaturia we proceed to the excessive discharge of urine, not a discharge of urine of any kind, (for frequently during the resolution of dropsy or acute diseases, or after the perspiration has been checked, and after hypochondriacal and hysterical spasms, it is discharged in great quantity with impunity), but that kind which reduces the strength, exhausts the body, and distresses the patient with unquenchable thirst*. This disease in Greek is named *diabetes*. In this complaint, the urine is either passed more copiously than the quantity of drink taken, or of serum in the blood, would require, and it is discharged without pain; or it resembles in taste, smell, and colour, the drink which is taken, little or nothing changed; or it is very similar to the chyle itself. Hence, in some patients it is watery and crude; in others pale, turbid, or thick; sometimes sweet, as if impregnated with honey †; sometimes it is white and inodorous; and sometimes it is passed with a smell like that of violets.

* That urine which is discharged in unusual quantity, in con-

stringents ought to be employed; as the juice of plantain, and of the *urtica*, not of the stinging kind; decoctions of the greater comfrey, milfoil, adding troches of *carabe*, or those of Gordon, which are particularly recommended by Haller and Duretus; catechu earth; Armenian bole; *fungus melitensis*; and other remedies, of which mention was made when I spoke concerning hemorrhage of other parts. Nor are vulnerary remedies, and those possessing a gently balsamic property, improper, if the blood be discharged from an ulcer or abscess. Likewise cold and gently astringent applications ought to be employed externally.

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202. FROM hæmaturia we proceed to the excessive discharge of urine, not a discharge of urine of any kind, (for frequently during the resolution of dropsy or acute diseases, or after the perspiration has been checked, and after hypochondriacal and hysterical spasms, it is discharged in great quantity with impunity), but that kind which reduces the strength, exhausts the body, and distresses the patient with unquenchable thirst*. This disease in Greek is named *diabetes*. In this complaint, the urine is either passed more copiously than the quantity of drink taken, or of serum in the blood, would require, and it is discharged without pain; or it resembles in taste, smell, and colour, the drink which is taken, little or nothing changed; or it is very similar to the chyle itself. Hence, in some patients it is watery and crude; in others pale, turbid, or thick; sometimes sweet, as if impregnated with honey †; sometimes it is white and inodorous; and sometimes it is passed with a smell like that of violets.

* That urine which is discharged in unusual quantity, in con-

sequence of the absorption of the humidity of the atmosphere, as occasioning no injury, is evidently to be excluded from this place.

† When urine in taste and smell resembles honey or sugar, according to some authors, it constitutes the genuine diabetes; and it is named by Sauvages, on account of being familiar to the inhabitants of Great Britain, *Diabetes Anglica*. See Targioni *Opuscoli physico-medici*, T. ii. p. 53.

203. These various discharges of urine are generally comprehended under one name. But it is better, with Ettmuller, to divide them into various species, namely, into the *diabetes vera*; into the *notha* or *spuria*; and into the *chylofa* *. The *true species* is the speedy transmission by urine of the drink little or nothing changed; for *diabetes* is derived from *διαβαλω*, signifying *cito transeo*. The *bastard*, or *spurious*, species, is that in which more urine is voided, than in proportion to the quantity of fluids taken. In this species there seems to be present a colliquation of almost the whole blood. Lastly, in the third species, chyle is passed along with the urine, or in place of it. In the *first* species, therefore, the *crudity*, rather than the quantity; in the *second*, the excessive quantity, claim our consideration. Between these an intermediate degree, as it were, is constituted by that species which is distinguished by the peculiar quality of the urine, and the chylous juice.

* Bary divides diabetes into four species. The *first* he compares with diarrhœa, and says that in it the chyle passes unchanged by the kidneys. He derives the *second* from dilatation of the *tubuli uriniferi*, in consequence of some of them being compressed by calculi, thus giving rise to the dilatation of others. The *third* he derives

from colliquation of the blood, in consequence of depravation of the bile. His *fourth* is the *nervous* and *convulsive* species. *A Treatise on the three different digestions*, &c. Lond. 1759, sect. iii. ch. 3.

204. The cause of the disease cannot be uniform. Sometimes debility of the liver and chylopoietic viscera; sometimes a ferous colliquation of the blood; sometimes laxity and atony of the kidneys; and sometimes several of these concur together. But the remote causes are, watery warm drink, in too great quantity and too long continued; the abuse of wine; drinking too much of the water of hot springs, especially that which is very diuretic; the more powerful diuretics*; the long-continued employment of mercurial and resolving remedies; acrid and dissolving poisons; too active or indolent a life; immoderate venery; moist states of the air; cooling of the body; diseases of the kidneys, as nephritic pains, abscesses, and calculi; great irritation of the nerves, according to Whytt†, as in dentition, obstruction of the liver‡, and spleen, preceding acute or chronic diseases; the bite of the *dypsas*||; to which others§ add a colluvies of the primæ viæ; bad digestion, and other similar causes; but in these cases the diabetes is sympathetic.

* According to Hildanus, Willis, and Lister.

† See Tissot *Epist. var. argum.*

‡ Meade, in persons who had died of diabetes, always found that the liver assumed somewhat of a steatomatous appearance; "because the thicker and oily parts which are less subdued in cold bodies are fixed in the liver." *De viper. p.* 117.

§ Aretæus, in consequence of the bite of the species of serpent

named *dyffus*, observed a diabetes arise, as is mentioned by Aetius, tetrah. iv. ferm. i. cap. 22. Aulus Tuscus, one of the foldiers of Dato, in Africa, as we are informed by Lucan, died in consequence of the bite of this serpent. It is a serpent like a viper. This disease is named *dipsanon*, (*a διψις, sitis*), on account of its occasioning thirst. See *Paul. Aeginet.* lib. iii. and *Bomar. diction. de chymie*, &c.

§ M. Baume *Lettre a l'auteur du Journal*. See vol. lvii. of the *Journ. de Medecine de Paris*.

DIAGNOSIS.

205. In whatever manner diabetes attacks a person, the nourishment is withdrawn from the body; hence great emaciation, thirst, sometimes hectic fever, and dryness of the internal parts follow. Moreover, the loins and haunches are frequently pained; the viscera are affected with heat; the saliva is frequently spit out; in some instances the testicles and fat become slightly swelled; or some patients frequently even fall into peripneumony*, or difficult deglutition, in consequence of which they are at length cut off.

* Locke (as Cocchi relates, *Bagni de Pisa*, l. 271.) saw seven patients labouring under diabetes, who, after two or three years, died of peripneumony, and spit up blood one or two days before their death. I myself saw the same thing in a patient of my own.

PROGNOSIS AND CURE.

206. The complaint, when it is slight in degree, is frequently curable; but when it has attained a height, it scarcely yields to any remedies, especially when it takes place in debilitated

and cachectic habits, in old people, and such as have indulged in venery to excess. It is extremely dangerous when it takes place in ardent or malignant fevers before the crisis. The treatment must be accommodated to the causes of the complaint. Upon the whole, it is performed by correctives, and such remedies as restore to the blood its proper crasis, and strength to the solids, and chiefly to the kidneys. Hence all incrassants, as the *serum lactis aluminosum* *, cow's milk †, boiled with the water of plantain, or with the *philonium*; calf-feet jelly, or that of sheep; the soup of frogs; the cream of rice, barley, or oats; farinaceous pottage of sago, of saleb-root, and orchis; emulsions of cold seeds, and sweet almonds; gum-arabic and gum-tragacanth; and anodynes of *nymphæa*, purslane, and white poppy, are to be employed. To these must be added the astringents and strengthening remedies; but especially chalybeates, tincture of bark, of carrots, old conserve of roses, of quinces, of sorbi, and the like. What has been asserted concerning tincture of cantharides in the cure of diabetes †, scarce deserves credit. In the diabetes occasioned by diuretics, Vogel recommends frequently giving rhubarb, conjoined with soluble tartar, to the extent of half a dram. Meade, and other English writers, recommend the Bristol water, which is very like lime-water ‡. Willis even recommends lime-water itself ||, to which Macbride proposes adding a portion of oak-bark §. Baglivi praises the pills of catechu ¶;

others the chalybeate waters. Cocchi prefers the acidulous waters with a milk-diet; as also ice-cold water **. It is likewise not improper to employ external astringents, to be applied to the region of the kidneys ††. From this it appears what the nature of the diet and regimen ought to be. The drink ought to be prepared with steel, and strong wine may be employed.

* Meade, cap. ix. sect. ii. *Monit. et præcept. med.* It is made by means of three drams of pulverised alum, thrown into four pounds of milk, gradually boiled. It is taken to the extent of four ounces, three times a-day. Brisban, however, asserts that he found both the *serum aluminosum* and the peruvian bark, as well as other astringents, prove fruitless. But he found emulsions of sweet almonds with gum-arabic serviceable. *Select cases in the practice of medicine*, &c. London, 1772.

† I have thought proper to transfer to this place the history of a spurious diabetes treated by the author, and which we have extracted from his Italian Journal for the year 1782, not only that the utility of the milk-diet may appear, but likewise that it may be seen, that in this disease bleeding is allowable and advantageous. The history is as follows:

“ In the month of May of this year (1782), I was called to an old man of seventy, of a large, sanguine, and bilious habit, who, after having scarce recovered from an attack of hemiplegia, being seized with spurious diabetes, voided his urine in such quantity as to exceed 160 or 170 ounces daily, though his drink did not equal the third of that quantity. His urine was natural and transparent. But two months ago all remedies had been employed to no purpose. I, therefore, immediately directed him to take, at different intervals, rhubarb conjoined with the pulp of tamarinds, to purge him, and that blood should be drawn from the foot, because he had begun to be attacked with aberrations of judgement, approaching to madness, and the pulse was sufficiently strong and hard. I then prescribed continuing the use of the milk longer, adding the tincture of bark. By these means the diabetes was very gradually diminished; and, at the expiry of a month, during which he employed

these remedies, he intirely recovered, and went abroad. With respect to blood-letting in diabetes, I would observe, that not long ago I attended a person labouring under the same disease, who had also been long subject to suppurations of the bladder, and probably also of the kidneys, in whom I ordered bleeding several times, whenever he was seized with fever, and a difficulty of breathing nearly as great as in peripneumony; and it was always attended with the greatest advantage. The blood appeared covered with the buffy coat, and corresponded exactly with the hard and strong pulse."

† Morgagni recommends the tincture of cantharides, which is composed of half an ounce of the infusion of cantharides in a pound of the elixir of vitriol. The dose is from 15 to 30 or 40 drops twice or thrice in a day, drinking over it the Bristol water. Brishan, also, recommends the same tincture, because he supposes that diabetes arises from paralysis of the renal nerves.

‡ *De viper.* p. 118. || *Cap. De diabete.* § *A methodical introduction to the theory and practice of physic,* Lond. 1772.

¶ Tissot recommends rubbing the whole body with oil, accompanying this with the internal employment of strengthening remedies, and especially of rhubarb; for the disease arises from an increased cuticular discharge, which is proved to be excessive by the observations of several authors, and especially of Melz and Kratzenstein, *Epist. var. argum.* p. 141. where he likewise adds, "That cantharides applied to the skin increase exhalation, and diminish inhalation; that they produce revulsion, and restore the function of the skin." Are they calcylated, therefore, for diabetes?

CHAPTER XVII.

OF INCONTINENCE AND SUPPRESSION OF URINE.

207. WHEN the urine is discharged by a person unconsciously, and without any stimulus, the

disease is named *incontinence of urine*, or the *enuresis* of Sauvages, which may be defined to be an *involuntary discharge of urine*. It occurs principally in children during sleep; for their animal powers being then lulled, either the sphincter is relaxed; or, being invited by the usual stimulus to make water, as when awake, they discharge their urine unconsciously. It is likewise a disease of frequent occurrence in paralytic, epileptic, delirious, and apoplectic persons, and often takes place immediately before death. Likewise old persons, those labouring under hernia, pregnant and puerperal women, persons labouring under fistula, or calculus of the bladder; such as have suffered the operation of lithotomy, or luxation of the vertebræ, and are affected with other morbid states of the urinary passages, are liable to this disease. Hence the *enuresis infantum*, or *nocturna*; *paralytica*; *spasmodica*; *calculosa*; *primaria*; *secundaria*; *idiopathica*; and *symptomata* proceed.

208. The principal cause is either too great laxity of the sphincter of the bladder; or a relaxation, or a violent and spasmodic contraction of its fibres, which the resistance of the sphincter cannot sufficiently oppose. The remote causes may be easily collected from what has already been said. An instance of an opposite affection to this is afforded by *ischuria*, or *suppression of the urine*; of which there are two kinds, namely, the *true* and *false*. It is named *true*, when the whole urine is collected and retained in the bladder,

without any of it passing off; but *spurious*, when the bladder is empty, and no urine passes from the kidneys into the bladder, either because it is not secreted in them, or if it be, it does not proceed through its passage freely.

209. It is not secreted in the kidneys, or, when secreted, it does not pass down into the bladder, first owing to a faulty state of the blood, in its being too thick and viscid, or passing too copiously to the kidneys; or in its passing through them too rapidly, or being kept off by them, in consequence of compression of the emulgent vessels, from their being obstructed by an aneurysm or polypus; and, secondly, owing to a fault of the kidneys, if the *tubuli uriniferi* be spasmodically affected, or labour under atony and paralysis; or if the kidneys be in a state of turgescence, on account of the return of the blood, by the emulgent veins being obstructed, or if they be compressed externally by fat, by faeces in the colon, by hydropic water, or any other cause, and cannot perform their function; or if they be obstructed by calculi, by sand, by viscid and thick humours, by pus, by inflammation, by an abscess, by a scirrhus, or other kind of tumour. Lastly, the urine will not be able to pass down to the bladder, if similar morbid states affect the ureters, obstructing the passage of the urine, and especially if their extremities at the mouths have become united.

210. The urine, when it passes down into the bladder, is prevented from being discharged, if the irritability or nervous power of the latter be languid or deficient, as happens in the paralysis of it; if the other compressing powers do not affect it, as in paralysis, or too great laxity of the abdominal muscles; if the bladder, in consequence of immoderate dilatation, have lost its elasticity and tone; if it fall into the scrotum, as happens sometimes in hernia of the scrotum, or cystic hernia, which Ruysch and Stoll * have observed; if the neck of the bladder have become hard, cartilaginous, or wrinkled †, as happens in advanced age; if the inner coat of the bladder form a prolapsus ‡, or be preternaturally distended in consequence of varicose vessels; if the sphincter become spasmodically contracted, and do not yield to the powers propelling the urine; if the urethra, either at the beginning, or in the course of it, be obstructed by a calculus, by mucus, by gluten, by thick pus, by grumous blood ||, or by other foreign bodies; or if it be straitened or shut by inflammation, by a callus, by tumours, by scirrhi, by carunculæ and fungous excrescences growing in it, or in its neighbourhood, namely, in the uterus, vagina, intestinum rectum, *vesiculæ seminales*, in the prostate and in Cowper's glands, in the perinæum §, in the scrotum, and in the penis; or even in consequence of these parts being any how remarkably swelled. To all of which we may add

wounds of the kidneys, of the ureters, and of the bladder, or even the violent lusting of these parts ¶.

* Besides Ruysch, Stoll, I say, observed that; for in part 3. of his *Rat. med.* p. 429. he mentions an instance of scrotal hernia, in which the bladder of urine was contained, which had passed down between the recti muscles of the abdomen, which were separated from one another above the *ossa pubis*.

† I myself have observed this in Jo. Bapt. Guidi, a physician of Fayence, and the same thing was noticed by Portal (*Mém. de l'Acad. de Paris*, &c. ann. 1770. 1771. p. 236.); and Gilchrist (*Edinburgh Physical Essays*.)

‡ Bordenau saw a man's bladder divided, as it were, into two sacs. Of these one was a *hernia of its inner coat*, stretched across through the interstices of the muscular one. The muscular fibres were separated from one another. The muscular fibres of the bladder are only *longitudinal*, there are no strong *circular* and *transverse* ones binding them together; they therefore readily separate from one another. Hence the spaces into which the inner coats insert themselves are chiefly at the sides; because there the bladder is not supported by any thing, as before and behind. *Hist. acad. scient. Paris*, ann. 1775. In the stomach, however, although herniæ of it sometimes happened, as I have already shewn in par. 52. they are not formed by the inner coat, because in it there are circular fibres disposed in various directions. Petrioli (*Corso anatom.* p. 92.) has an observation from the physician De Rubcis, concerning a girl who had laboured for several days under an ischuria of the bladder, all remedies, not even with the exception of the catheter, having been employed to no purpose. Upon the third day of her treatment the lower part of the abdomen became swelled, and was affected with such excruciating pain, that she seemed to be threatened with instant death. But upon the fourth day, on trying with a great effort to make water, she passed by the urethra an oblong membrane, flaccid and soft, which was improperly taken for the bladder in a state of putrefaction. But it was in fact the mucous membrane of the bladder separated from the per-

vous coat, on account of its thickness, and passed intire, as it is frequently voided by calculous patients in pieces. The young woman afterwards made water with ease, and recovered her perfect health. Rohault, also, (*Mem. de l'acad. de Paris*), saw parts of the bladder of urine ejected in *ischuria vesicalis*.

|| Monsr. de la Perche saw and cured a case of *ischuria vesicalis*, which had arisen from clots of blood adhering to the bladder, on account of the opening of varicose vessels in its neck. He extracted the above-mentioned blood by means of a syringe, to which he had adapted a small clyster, surrounding the part at which they were united with wax, and he employed it after the manner of a tube for breathing. He did the same thing also in another similar case. See *Hist. de l'acad. roy. de med.* T. ii. p. 242. and 244. Haller, in an *ischuria* of this kind, proposes the dividing of the perinæum as in lithotomy.

§ Piplet the younger (*Mem. de l'acad. roy. de chirurg.* T. xi. p. 283.) describes a strangury from a hernia of the bladder in the perinæum, as follows: "It was preceded by a contusion, or a great exertion; a pain came on in the perinæum, at first acute, but afterwards obtuse; the making of water was difficult, and it was scantily voided; and upon the perinæum being pressed by the hand, the discharge of urine became more easy. If the body was bent forward, there appeared in the perinæum a soft, round, or oblong swelling, which disappeared upon pressure in the horizontal posture. It was near the urethra, and a short way from the anus. The cause of it was the separation of the fibres of the muscles which raise the anus, and of the musculus transversus, which shut the pelvis below.

¶ During a difficult labour, in the case of a woman of thirty-eight years of age, who was brought to bed for the first time, the bladder was burst towards its upper part, in consequence of which a copious effusion of urine within the abdomen took place. She died upon the ninth day after delivery. See the observations and inquiries of the Medical Society of London, vol. iv. p. 58. A case of fatal inversion of the uterus, with rupture of the bladder, may be found in *Comment. de reb. in scient. natur. et med. gest.* Lips. vol. xviii. P. iii. p. 409.

DIAGNOSIS.

211. THE *ischuria notba*, or *spurious ischuria*, is known to be present, if the bladder be not raised up into a swelling, if no pain be perceived about the pubes, and no weight about the perinæum, and if, on introducing the catheter into the bladder, no urine be found. On the other hand, in the *true* species of the complaint, there is an uneasy sense of weight, pain, and stretching about the loins, or symptoms of the kidneys and ureters being affected betray themselves; frequently, also, in consequence of the retention or regurgitation of the urinous serum, to these symptoms are added, straitening and anxiety of the præcordia; torpor, and extreme drowsiness; fetid breath; an urinous smell in the sweat; a swelling of the body and face, as in anasarca; and many other severe symptoms which accelerate the patient's death.

PROGNOSIS.

212. *Incontinence of urine*, according to the variety of its causes, is attended with more or less difficulty. That which in children is called *nocturnal*, in process of time, for the most part, goes off of its own accord. In adults and old people it is seldom curable; at any rate, it proves of long continuance and obstinate. But the *ischuria*

vera occasions greater trouble and danger than the *spuria*, principally on account of the danger of inflammation ; nor does it cease until the causes be removed. The *secondary* species is removed upon curing the disease, upon which it depends, as well as the obstructions, if these admit of being removed.

THE CURE.

213. LAXITY, atony, and paralysis of the sphincter, require strengthening and stimulant remedies, such as peruvian bark, *uva ursi*, *virga aurea*, steel, turpentine, amber, mastich ; while it is proper to apply externally, both to the perinæum, os sacrum, and lumbar spine, the ethereal oil of turpentine, of amber, and ants ; the antiparalytic balsam of Gherli ; the dropping of medicated water ; and the like. Nor must the affusion of cold water be neglected. Blisters, as every person knows, are recommended in all kinds of palsy, especially applied to the origin of the nerves which go to the part affected. On which account, as when applied to the nape of the neck in palsy of the superior extremities, they are productive of the greatest service ; so, for the same reason, Dickson* supposes that in paralysis of the lower extremities, they ought to be applied to the os sacrum ; and he points out the advantage of this remedy in incontinence of the urine, proceeding from paralysis of the sphincter, in several

cases which he adduces. Fothergill also confirms the fact by two instances †. Hoffman informs us, that children and old people labouring under atony derive benefit from milfoil, veronica, ground-ivy, straw-berries, agrimony, and the bark of the root of acacia. When children make water during sleep ‡, they ought to abstain from drinking in the evening, or at least to use it very sparingly, or they ought to be occasionally awaked, and reminded to make water. If spasm of the bladder, or convulsive affections occasion the incontinence, anodynes and antispasmodics are the most proper remedies. The other causes are removed by the remedies accommodated to them.

* *Medical observations and inquiries, by a society*, vol. ii. p. 311. vol. iii. p. 102. † *Ibid.* p. 138.

‡ Leger of Paris cured a nocturnal incontinence of urine in the case of three girls, of thirteen, fifteen, and twenty-four years of age, in the following manner: *Rec. pulv. cantharid. gr. vi. extract. borag. drachm. ij. misce probe et divide in partes aequales num. xxiv. Detur una dosi singulis noctibus.* In the young woman of twenty-four years of age, the remedy was continued for seventy days, and the dose of cantharides was occasionally increased. If any ardor urinæ be experienced during the employment of this remedy, a decoction of linseed is recommended. See the *Journ. de med.* January, 1781, p. 72.

214. In the *ischuria vera*, sometimes emollients, the steam of hot water and semicupium; sometimes opening the hemorrhoidal veins, injections, and gentle laxatives; sometimes stimulants, and strengthening and antispasmodic remedies; sometimes dilating bougies, inducing suppuration, and

gently cleansing, according to the variety of the causes, are the most proper remedies. But the chief is, the frequent extraction of the urine by means of a catheter, a practice which ought to be continued for a length of time. If the catheter cannot be introduced into the bladder at all, a passage must be procured for the urine from the perinæum, or from the rectum, (which is safer), by introducing a trocar. But diuretic and acrid things must be avoided *. Tode removed an *ischuria vesicalis*, occasioned by retaining the urine too long, by anointing the perinæum and hypogastrium with the boiled oil of chamomile, with which some of the distilled oil of the same had been mixed. It was followed by incontinence of urine, or the *cnuresis* of Sauvages, which was removed by the affusion of cold water †. Ischuria frequently arises from laxity and atony of the bladder itself, so that it cannot be overcome by the resistance of the sphincter. Mackenzie, in a case of this kind, in which bleeding, clysters, semicupium, and other emollient remedies, had been employed to no purpose, had recourse to the peruvian bark with the best effect ‡. In the *spurious* species again, nearly the same remedies as in the genuine are recommended, except the employment of the catheter, which, as appears, is superfluous. Likewise such remedies as gently excite a flow of urine, relax and open the passages, and attenuate the thick humours, may be employed.

* See par. 284. Vol. iii. where the author mentions, that diuretics may be of service only in the *spurious ischuria*, in which the urine is deficient, on account of its not being secreted in the kidneys; as here also, towards the end of the paragraph, he has hinted. [*Germ. Edit.*]. † *Collect. soc. med. Hauniens*, vol. i. p. 219.

In the Italian Journal of our author for the year 1784, at the end of it, we find the following observation. [*Germ. Edit.*]
 “In the month of August, Count Salazzar, the father, laboured under an *ischuria vesicalis*. The cure was performed by bleeding, clysters, fomentations, semicupium, peruvian bark, by the frequent extraction of the urine, and by simple diluent anodynes. After fifteen days had elapsed, some suppuration took place; for, on a quantity of pus being discharged, the urine was voided freely. The cause of the complaint appeared to me to consist in a tubercle growing in the neck of the bladder.”

‡ *Edin. phys. essays*, 1758, p. 81. and Jo. Bap. Videmari, of Milan, in his work entitled, *De rariori quadam ischuriæ specie*.



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SOME TIGHT
GUTTERS

